



## Department of Energy

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**JUN 30 2015**

Ms. Maria Galanti  
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PPPO-03-3018616-15

Dear Ms. Galanti:

**FINAL RECORD OF DECISION FOR THE SITE-WIDE WASTE DISPOSITION  
EVALUATION PROJECT AT THE PORTSMOUTH GASEOUS DIFFUSION PLANT  
(DOE/PPPO/03-0513&D2)**

References:

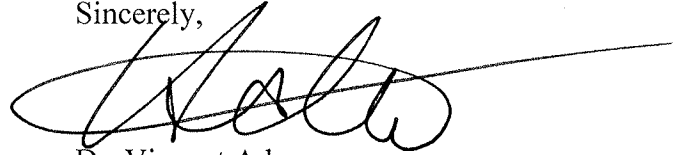
1. Letter from W. Murphie to M. Galanti, "Record of Decision for the Site-wide Waste Disposition Evaluation Project at the Portsmouth Gaseous Diffusion Plant (DOE/PPPO/03-0513&D2)," (PPPO-03-3003562-15), dated June 22, 2015
2. Letter from C. Butler to K. Wiehle and J. Bradburne, "Ohio EPA Concurrence/Approval as Applicable on the Record of Decision for the Site-Wide Waste Disposition Evaluation Project," dated June 30, 2015

Enclosed please find the U.S. Department of Energy's (DOE's) final *Record of Decision for the Site-wide Waste Disposition Evaluation Project at the Portsmouth Gaseous Diffusion Plant* (DOE/PPPO/03-0513&D2) (WD ROD) for your records. The Ohio Environmental Protection Agency (Ohio EPA) was provided with the draft WD ROD, which Ohio EPA concurred and approved, as applicable, in the letter dated June 30, 2015. The enclosed WD ROD is the final version and has been signed by Mr. William E. Murphie, Manager of the Portsmouth/Paducah Project Office. This document was prepared in accordance with *The April 13, 2010 Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action, including the July 16, 2012 Modification thereto*.

Ohio EPA's engagement and participation in early discussion and draft document reviews was a tremendous benefit to the project and DOE appreciates your cooperation.

If you have any questions or require additional information, please contact Kristi Wiehle of my staff at (740) 897-5020.

Sincerely,

A handwritten signature in black ink, appearing to read 'V. Adams', with a long horizontal flourish extending to the right.

Dr. Vincent Adams  
Portsmouth Site Director  
Portsmouth/Paducah Project Office

Enclosure:

Final Record of Decision for the Site-wide Waste Disposition Evaluation Project at the  
Portsmouth Gaseous Diffusion Plant (DOE/PPPO/03-0513&D2)

cc w/enclosure:

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**RECORD OF DECISION  
FOR THE  
SITE-WIDE WASTE DISPOSITION  
EVALUATION PROJECT  
AT THE  
PORTSMOUTH GASEOUS DIFFUSION PLANT,  
PIKETON, OHIO**



**U.S. Department of Energy  
DOE/PPPO/03-0513&D2**

**June 2015**

This document is approved for public release per review by:

*Sam Eldridge* (signature on file)

04-02-2015

PORTS Classification Office/Export Controlled Information Officer

Date

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**RECORD OF DECISION  
FOR THE  
SITE-WIDE WASTE DISPOSITION  
EVALUATION PROJECT  
AT THE  
PORTSMOUTH GASEOUS DIFFUSION PLANT,  
PIKETON, OHIO**

**U.S. Department of Energy  
DOE/PPPO/03-0513&D2**

**June 2015**

**Prepared for  
U.S. Department of Energy**

**Prepared by  
Fluor-B&W Portsmouth LLC, Under Contract DE-AC30-10CC40017  
FBP-ER-RIFS-WD-RPT-0041, Revision 7**

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## ACRONYMS

AOC	area of contamination
ARAR	applicable or relevant and appropriate requirement
BERA	baseline ecological risk assessment
CAMU	Corrective Action Management Unit
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended
<i>CFR</i>	<i>Code of Federal Regulations</i>
COC	contaminant of concern
D&D	decontamination and decommissioning
DFF&O	<i>The April 13, 2010 Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action, including the July 16, 2012 Modification thereto</i>
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
EC	engineering category
ELCR	excess lifetime cancer risk
EPA	U.S. Environmental Protection Agency
FS	feasibility study
FY	fiscal year
GDP	gaseous diffusion plant
IMTA	impacted material transfer area
LDR	land disposal restrictions
LLW	low-level (radioactive) waste
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act of 1966
NNSS	Nevada National Security Site
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
<i>OAC</i>	<i>Ohio Administrative Code</i>
Ohio EPA	Ohio Environmental Protection Agency
OHPO	Ohio Historic Preservation Office
OSDC	on-Site disposal cell
PCB	polychlorinated biphenyl
PGE	process gas equipment
PHC	principal hazardous constituent
PHWH	Primary Headwater Habitat
PORTS	Portsmouth Gaseous Diffusion Plant
RAO	remedial action objective
RC	regulatory category
RCRA	Resource Conservation and Recovery Act of 1976, as amended
RD/RA	remedial design/remedial action
RFI	RCRA facility investigation
RI	remedial investigation
ROD	Record of Decision
S&M	surveillance and maintenance
T&E	threatened and endangered

TBC	to-be-considered (guidance)
TCE	trichloroethene
TRU	transuranic
TSCA	Toxic Substances Control Act of 1976
<i>USC</i>	<i>United States Code</i>
USEC	United States Enrichment Corporation
USFWS	U.S. Fish and Wildlife Service
WAC	waste acceptance criteria



## **PART 1. DECLARATION**

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## SITE NAME AND LOCATION

Site-wide Waste Disposition Evaluation Project at the Portsmouth Gaseous Diffusion Plant (PORTS) in Piketon, Ohio.

## STATEMENT OF BASIS AND PURPOSE

This Record of Decision (ROD) presents the selected remedy for the Site-wide Waste Disposition Evaluation Project at the U.S. Department of Energy (DOE) PORTS Facility in Piketon, Ohio. This project provides a decision on how to disposition the waste generated from actions conducted under the Ohio Environmental Protection Agency (Ohio EPA) Director's Final Findings and Orders (DFF&O<sup>1</sup>). The DFF&Os were issued to DOE pursuant to the authority vested in the Director of Ohio EPA under *Ohio Revised Code* Sections 3704.03, 3734.13, 3734.20, 6111.03, and 3745.01, and DOE entered into the DFF&O pursuant to Section 104 of Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986 (CERCLA), 42 *United States Code (USC)* §9604, Executive Order 12580, and the Atomic Energy Act of 1954, as amended, 42 *USC* §2011, *et seq.* This remedial action was selected in accordance with the DFF&O and pursuant to DOE's CERCLA authority under Executive Order 12580.

The decision presented herein considers the information in the Administrative Record File for the Site-wide Waste Disposition Evaluation Project at PORTS, including comments received during the public comment period held from November 12, 2014 to March 11, 2015, and at the public meeting held on November 17, 2014, following issuance of the Proposed Plan. Major project documents prepared include the preinvestigation evaluation report, remedial investigation/feasibility study (RI/FS) work plan, the RI/FS report, and the Proposed Plan. All comments received during the public comment period on the Proposed Plan were reviewed and considered in the development of this ROD. Numerous public comments were received and DOE has responded to the comments in Part 3 of this ROD, the Responsiveness Summary. Ohio EPA approved the final waste acceptance criteria (WAC) for the On-Site Disposal Cell (OSDC) on October 31, 2014. Ohio EPA concurs/approves, as applicable, with the selected remedy and approves the applicable or relevant and appropriate requirements (ARARs) and Schedules and Milestones set forth in this ROD in accordance with the DFF&O.

## ASSESSMENT OF THE SITE

The response actions selected in this ROD are necessary to protect public health or welfare and the environment from actual or threatened releases of hazardous substances from the degradation of the buildings and structures or from unattended waste generated from decontamination and decommissioning (D&D) of the buildings and structures.

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<sup>1</sup> The April 13, 2010 Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action, including the July 16, 2012 Modification thereto (DFF&O) (Ohio EPA 2012), which went into effect July 16, 2012.

## DESCRIPTION OF THE SELECTED REMEDY

This ROD presents the selected remedy for the Site-wide waste management decision (the Site-wide Waste Disposition Evaluation Project, termed the Waste Disposition Project) for waste generated under other DFF&O projects. The selected remedy for the Waste Disposition Project is Alternative 2, on-Site disposal with an off-Site component and includes the following elements:

- Requires a final WAC that meets all ARARs and is in compliance with the DFF&O for any constructed OSDC. The Ohio EPA-approved WAC consists of seven components, which are outlined in the DFF&O: (1) prohibited items resulting from ARARs or DOE decisions or agreements; (2) activity criteria and chemical concentration criteria (radiological levels and other contaminant levels); (3) waste evaluation and characterization standards (methods used in the field to verify waste can go into a potential OSDC); (4) waste physical characteristics standards (size and shape of items); (5) waste packaging standards; (6) waste safe handling standards; and (7) waste transportation standards. Several of the components (3 through 7) of the final WAC will require refinements after the final design is completed. Such refinements for these WAC components will be reviewed and approved by Ohio EPA in future OSDC-related regulatory documents as required by the DFF&O.
- Provides for transportation and disposal of D&D waste (regulatory category [RC]-1) meeting the WAC in the OSDC, with waste not meeting the WAC either treated (under this decision or under the decisions generating waste) or shipped by truck or rail and disposed off-Site at disposal facilities approved for receipt of such waste.
- Provides for transportation and disposal of non-radiologically contaminated and non-hazardous D&D waste (RC-1) to the OSDC or at an appropriately permitted local, off-Site solid waste disposal facility.
- Provides for construction and operation of centralized size reduction or decontamination process and/or storage of recovered materials in support of recycling and/or reuse initiatives
- Consideration and evaluation of a complex centralized treatment system to support future recycling opportunities. Centralized treatment in this context refers to complex, non-commercial, ARAR-compliant treatment efforts. Actual implementation of these efforts would require a modification to this ROD or an additional decision document.
- Provides for the design, construction, and operation of the OSDC in Study Area D satisfying both design-based and performance-based requirements of DOE and other substantive requirements and guidance developed and documented in the ARARs/to-be-considered (guidance) for the on-Site alternative. The OSDC is envisioned to be built in modular fashion with individual lining systems so as to ensure sufficient capacity is available to support D&D activities and the disposition of D&D waste, but without the program risk of developing disposal capacity that will not be used.
- Requires the construction of all infrastructure supporting the OSDC in compliance with ARARs, including wastewater treatment designed for the waste constituents and throughput from anticipated leachate from any on-Site landfill operations, as well as contact water that may be generated. Infrastructure to collect and evaluate storm water will also be developed.

- Requires the construction of other infrastructure supporting the OSDC in compliance with ARARs, including haul roads, rail yard upgrades, and other waste conveyances, as appropriate, to transport waste from the generation area to the OSDC.
- Provides for fill material, for purposes of supporting waste placement in the OSDC, is anticipated to be from on- and/or off-PORTS borrow locations. If non-DFF&O contaminated soil is used, it would be from on-PORTS. If non-DFF&O contaminated soil is used as fill, which this remedy contemplates, additional regulatory authorizations/approvals, as applicable, will be required to excavate, treat if necessary, and dispose of this fill into the OSDC. Accordingly, DOE will seek appropriate authorizations/approvals, as applicable, to allow placement of such non-DFF&O contaminated soil as fill in the OSDC.
- Allows for the construction and operation of a waste staging area (Intermediate Material Transfer Area [IMTA]) to support the OSDC where waste could be held on a non-permanent basis, such as when operations at the OSDC are temporarily closed or for operational optimization. This staging area will provide for the temporary staging of waste (and, if needed, centralized size reduction or treatment of waste), in accordance with ARARs for logistics purposes to support the optimal placement of waste requiring fill (engineering category [EC]-2) and soil (EC-1) in the OSDC.
- Requires institutional controls at the OSDC to prevent access to the waste in the future in compliance with ARARs.
- Requires long-term maintenance, surveillance, and monitoring in compliance with ARARs.
- Designates the OSDC as a treatment, storage and disposal Corrective Action Management Unit (CAMU) and the adjacent staging area, the IMTA, as a treatment and storage CAMU, both under *Ohio Administrative Code 3745-57-72*. Defines an area of contamination to be the area at PORTS with continual/contiguous contamination.
- Provides for transportation on Site from where the waste is generated to the disposal location.
- Allows for treatment in three cases:
  - Centralized treatment such as size reduction and decontamination by physical or chemical (washing) processes to allow waste to meet an on-Site or off-Site WAC or recycling and/or reuse requirements. The location of a centralized treatment system can be anywhere on Site, including near the OSDC.
  - Treatment of any DFF&O waste that may be conducted at an off-Site disposal facility prior to disposal. DOE will obtain the necessary approvals/authorizations, as applicable, and will meet all applicable requirements, including meeting the WAC, for the on-Site disposal of any DFF&O waste which is treated off-Site and returned to DOE for disposal in the OSDC/CAMU.
  - Treatment of secondary wastes (those generated from OSDC operations), including wastewater and/or leachate, residual soil, and non-DFF&O contaminated fill with additional regulatory authorization/approval, as applicable, (in compliance with ARARs and/or other regulatory requirements to meet the OSDC WAC).

- Allow for consideration (evaluation, treatability studies, etc.) of decontamination treatment efforts that require construction of complex treatment systems to support recycling and/or reuse activities over those defined above. Modifications to this ROD would be needed to address the details of any such complex system.
- Requires the off-Site disposal and/or treatment of any D&D waste or non-DFF&O contaminated soil intended for use as fill that does not meet the WAC for the OSDC. All WAC of off-Site disposal facilities that are used must be met.
- Allows for additional off-Site disposal or recycling and/or reuse of waste or materials at DOE discretion, assuming the off-Site disposal facility WAC and associated recycling criteria are met.
- Allows for the storage of any nickel recovered for recycling and/or reuse. The storage will be implemented in compliance with ARARs and in a way to ensure safe, long-term protectiveness.
- With proper authorizations/approvals, as applicable, the remedy allows waste generated from activities outside the scope of D&D (referred to as non-DFF&O waste) to be disposed in the OSDC.

### **STATUTORY DETERMINATIONS**

The selected remedy is protective of human health and the environment, complies with applicable or relevant and appropriate federal and state requirements or provides the justification for a waiver, is cost-effective, and uses permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable.

Although treatment is a component of the selected remedy, the amount of treatment used is likely to be small. However, the remedy meets the premise behind the statutory preference for treatment as a principal element of the remedy because a majority of the waste has low levels of contamination but high volumes. CERCLA guidance recognizes that it is not cost-effective to apply treatment technologies to low-contamination, high-volume waste streams. Most treatment of waste at PORTS would be authorized under the various documents for actions generating waste. The exception would be treatment of OSDC-operations wastes (including wastewaters and/or leachate), treatment conducted off Site, and centralized treatment conducted for multiple DFF&O waste streams to support recycling and/or reuse or compliance with WAC.

Because this remedy results in hazardous substances, pollutants, or contaminants remaining on Site at the point of generation above levels that allow for unlimited use and unrestricted exposure, a 5-year review will be required for this remedial action. The effectiveness of the disposal facility, the protectiveness of selected performance levels, and the state of containment technologies will be evaluated every 5 years to ensure continued protectiveness.


## **ROD DATA CERTIFICATION CHECKLIST**

The following information is included in the Decision Summary section of this ROD. Additional information can be found in the Administrative Record File.

- Site name, location, and description
- Site history and enforcement activities
- Community participation
- Scope and role of response action and its relationship to other decisions
- Site characteristics
- Current and reasonably anticipated future land use assumptions used in the risk assessment and remedial action objectives (RAOs)
- Potential risk represented from exposure to the contaminants of concern
- RAOs
- Description of the three alternatives considered
- Summary of a comparative analysis of the three alternatives
- The lack of principal threat waste
- Description of the selected remedy
- How the selected remedy meets the statutory requirements
- Documentation of any significant changes.

**SIGNATURE**

Approval:

  
\_\_\_\_\_  
William Murphie, Manager  
Portsmouth/Paducah Project Office  
U.S. Department of Energy

Date: 6/30/15



## **PART 2. DECISION SUMMARY**

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## **1. SITE NAME, LOCATION, AND DESCRIPTION**

The Portsmouth Gaseous Diffusion Plant (PORTS), which began operations in 1954, is located on a 3,777-acre federal reservation in a rural area of Pike County, Ohio (Figure 1). The U.S. Department of Energy (DOE) owns the Facility and is carrying out cleanup efforts.

From 1954 to 2001, the PORTS gaseous diffusion process enriched uranium for DOE and predecessor agencies, the Naval Nuclear Propulsion Program, and commercial customers. In 1993, DOE began leasing the uranium enrichment production and operations facilities at PORTS to the United States Enrichment Corporation (USEC). Uranium was enriched at PORTS by USEC until May 2001, at which time the production facilities were placed into a cold-standby mode. During cold standby, the process buildings were maintained with a restart capability as a strategic hedge against a disruption in the nation's supply of enriched uranium. DOE terminated the cold-standby program in September 2005 and replaced it with a cold-shutdown program, which no longer maintained the gaseous diffusion restart capability. The process buildings, support facilities, and auxiliary facilities are more than 50 years old, but they have been maintained in a safe and secure condition.

The gaseous diffusion plant (GDP) and the surrounding area are owned by DOE. The entire Facility consists of approximately 415 buildings, structures, utility systems, or infrastructure units with three main process buildings known as X-333, X-330, and X-326, which house the gaseous diffusion equipment. The three main process buildings are located in the center of PORTS and cover a combined footprint of approximately 90 acres (Figure 2). Various support and auxiliary buildings/structures include many substantial buildings/structures for product feed and transfer operations, maintenance, steam generation, chemical cleaning, decontamination, process heat removal, water supply, water storage, water distribution, and electrical power distribution. Other buildings house the administrative offices, medical facility, security headquarters, plant control facility, and laboratory support. These buildings consist mostly of concrete/steel construction on concrete slabs.

The three process buildings, as well as most of the remaining buildings/structures and infrastructure, are situated within the approximately 1,000-acre industrialized area that lies within Perimeter Road. The industrialized area includes a 750-acre controlled access area. The central, industrialized area is largely devoid of trees, with managed lawns, parking lots, and paved roadways dominating the open space. The portion of the DOE property outside of Perimeter Road, consisting of more than 2,500 acres, is used for a variety of purposes, including a water treatment plant, sediment ponds, sanitary and inert landfills, cylinder storage yards, open fields, and forested buffer areas (U.S. Nuclear Regulatory Commission 2006). Closed existing landfills and burial grounds account for approximately 101 acres.



Figure 1. PORTS Location

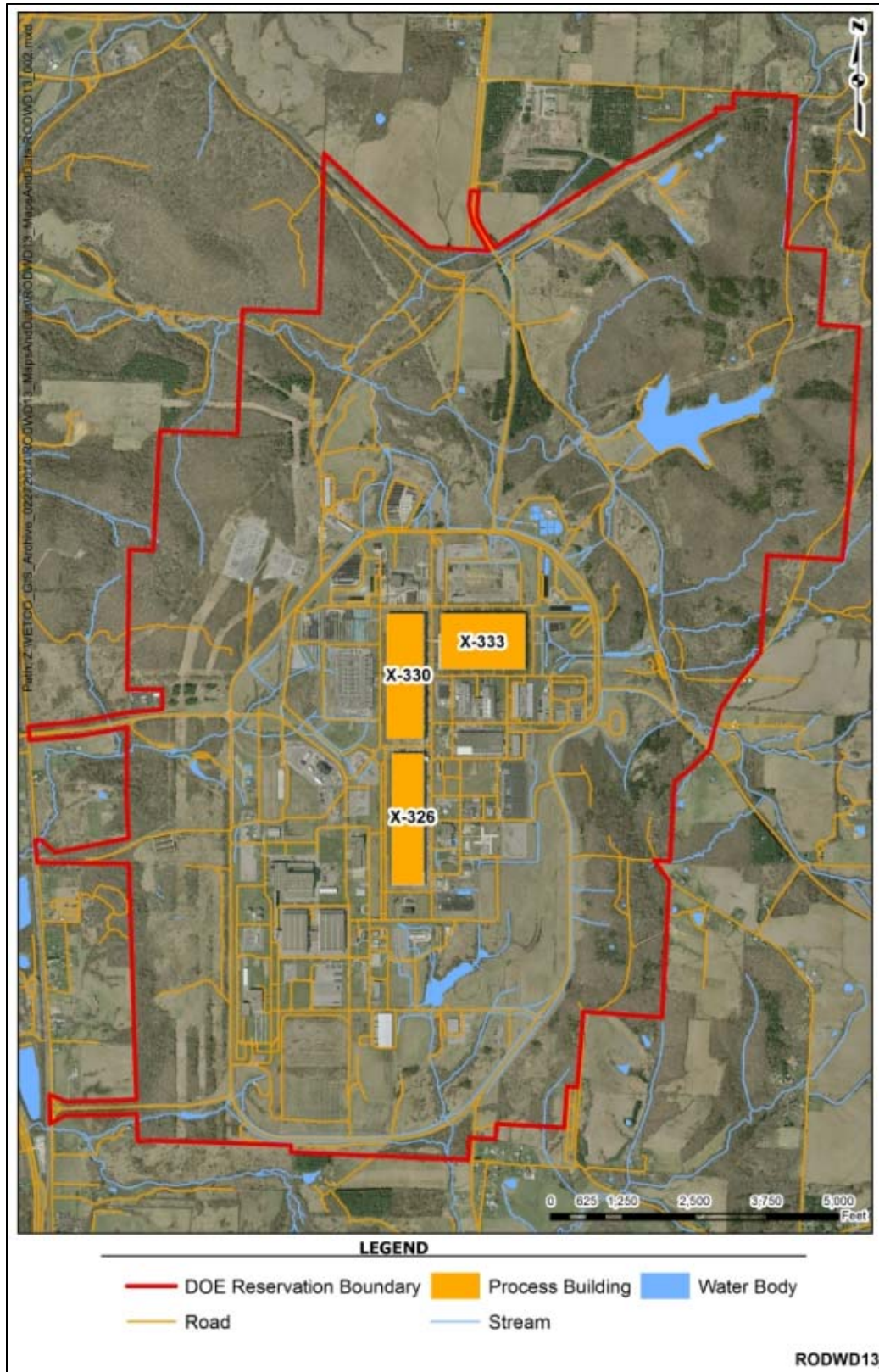


Figure 2. PORTS Facility

## 2. SITE HISTORY AND ENFORCEMENT ACTIVITIES

PORTS began operations in 1954 and was one of three uranium enrichment facilities originally constructed in the United States; the other two were constructed in Oak Ridge, Tennessee, and Paducah, Kentucky. PORTS used the gaseous diffusion process to provide highly-enriched uranium to the U.S. Navy and low-enriched uranium for electrical power generation. From 1991 until production ceased in 2001, PORTS produced only low-enriched uranium for commercial power plants. In 1993, DOE leased the commercial uranium enrichment operations to USEC while retaining responsibility for certain environmental restoration and waste management activities, uranium programs, and long-term stewardship of non-leased facilities at PORTS.

In August 2000, USEC made a business decision to terminate its enrichment operations at PORTS and ceased those activities in May 2001. At that time, DOE contracted with USEC to establish a cold-standby program to maintain enrichment restart capability at the facility as a strategic hedge against disruption in the nation's supply of enriched uranium. The cold-standby program was terminated by DOE at the end of fiscal year (FY) 2005, and the facilities have been maintained in cold-shutdown status while decontamination and decommissioning (D&D) was planned.

Many operations and maintenance activities at PORTS involved hazardous conditions and the potential for exposure of personnel and the environment to radioactive and chemical hazards. Enrichment process facilities with the potential for such exposures included the gaseous diffusion cascade and other process buildings; a process feed manufacturing plant; an oxide conversion plant; decontamination, cleaning, and uranium recovery facilities; a smelter; and incinerators. Leaks and off-gassing from process gas equipment (PGE) or components being repaired or replaced resulted in the release of airborne uranium, transuranic constituents, fission products, fluorine, and hydrogen fluoride gas (DOE 2000a). Various hazardous substances such as asbestos, beryllium, lead, trichloroethene (TCE) and other solvents, polychlorinated biphenyls (PCBs), acids, chromium, nickel, lithium, and mercury were also used. Radioactive materials and other hazardous substances were spilled or released to the environment from production-related facilities and attendant work activities.

Activities to manage wastes and liquid process effluents evolved over the operating lifetime of PORTS. Throughout its history, efforts were made to minimize the loss of valuable enriched uranium in PORTS waste streams. However, the PORTS sanitary landfills likely received some contaminated material because waste segregation practices were not fully implemented. As new requirements were enacted, additional waste streams, such as hazardous wastes, were restricted from disposal in PORTS landfills. Oils contaminated with PCBs and uranium were disposed of in oil biodegradation plots, burned in open containers, or incinerated (DOE 2000a).

In the 1970s, several new wastewater treatment systems were constructed to meet new permit requirements and to significantly reduce the levels of radionuclide emissions to surface water. The PORTS National Pollutant Discharge Elimination System (NPDES) permit, issued by the State of Ohio in the 1970s, required testing and reporting of specific chemical and physical properties and set limits on chemical discharges. Despite the discharge restrictions, legacy environmental contamination exists in ponds, ditches, and streams (DOE 2000a).

Dating back to 1989, eight major environmental regulatory documents have been established for PORTS and variously amended. These are summarized in Table 1. The table identifies the document, its year of enactment, and its major intended purpose.

**Table 1. PORTS Regulatory Documents**

<b>Regulatory Document</b>	<b>Date</b>	<b>Purpose</b>
Ohio EPA Consent Decree	1989	Requires investigation and remediation of solid and hazardous waste units in accordance with RCRA, between Ohio EPA and DOE
Toxic Substances Control Act Compliance Agreement (EPA and DOE)	1992	Brings DOE into compliance with TSCA regulations; establishes D&D milestones for TSCA waste, as modified in 1997
Ohio Hazardous Waste Facility Installation and Operation Permit (and Renewal)	1995-present	Allows RCRA-permitted container storage for hazardous waste with DOE as the Owner and Co-Operator and current Co-Operator; references the RCRA Corrective Action Orders: Ohio Consent Decree, Administrative Consent Order, and Ohio Director's Final Findings and Orders for Integration; and amended in 2011 to add/remove Co-operator
Ohio Director's Final Findings and Orders for Site Treatment Plan	1995	Allows for the storage of mixed hazardous waste beyond the 1-year regulatory limit; requires an Annual Site Treatment Plan Report; and the 1993 amendment was superseded
Administrative Consent Order	1997	Requires investigation and remediation of solid and hazardous waste units in accordance with RCRA and CERCLA, between EPA and DOE
Ohio Director's Final Findings and Orders for Integration	1999	Integrates five RCRA closures into the RCRA Corrective Action Program. Provided for integration of groundwater monitoring and surveillance; maintenance of RCRA and solid waste units; amended in 2011 to update regulatory citations and include the D&D contractor
Ohio Director's Final Findings and Orders [for Depleted Uranium Hexafluoride]	2008	Requires DOE and assigned parties to generate and comply with the Depleted Uranium Hexafluoride Management Plan; amended in 2011 to add/remove assigned parties; and the 2004 and 2005 amendments were superseded
Ohio Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action [for the Portsmouth Gaseous Diffusion Plant (Decontamination and Decommissioning Project)]	2010	Provides the framework for DOE to address the D&D of the GDP and support facilities using the CERCLA process; amended in 2011 with revisions to Attachments G, H, and I, corrected inadvertent omissions, reflected current strategy of documentation; and amended in 2012 with a revision to Attachment H
CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended D&D = decontamination and decommissioning DOE = U.S. Department of Energy EPA = U.S. Environmental Protection Agency		GDP = gaseous diffusion plant Ohio EPA = Ohio Environmental Protection Agency RCRA = Resource Conservation and Recovery Act of 1976, as amended TSCA = Toxic Substances Control Act of 1976

The existing Ohio Consent Decree, signed in August 1989 by the Ohio Environmental Protection Agency (Ohio EPA) and DOE, requires DOE to complete investigations to determine the nature and extent of any environmental contamination within identified Resource Conservation and Recovery Act of 1976, as amended (RCRA) solid waste management units at PORTS, complete cleanup alternative studies, and implement corrective actions as needed.

Coincident with the Ohio Consent Decree signed in 1989, DOE established the Environmental Restoration Program to identify, control, and remediate environmental contamination at PORTS.



The Environmental Restoration Program addresses inactive sites through remedial action, and it deals with contaminated soil, and groundwater associated with active facilities by eventually implementing D&D. Because PORTS is a large area, it was divided into four quadrants to facilitate the environmental contamination investigation and cleanup process.

DOE has completed the description of current environmental conditions, RCRA facility investigations (RFIs), and a cleanup alternatives study/corrective measures study for each quadrant. These investigations and reports detail the characteristics of PORTS that are pertinent to the process buildings and complex facilities evaluation and characterize the nature and extent of contamination in soils, surface water, and groundwater at PORTS. The primary sources of information include the RFIs for the four quadrants (DOE 1996a, 1996b, 1996c, 1996d) and the corresponding corrective measures studies (DOE 1998a, 1998b, 2000b, 2001). DOE is in the process of completing RFIs for various solid waste management units that were deferred.

As a result of these studies, the focus has been to control contaminant migration and address corrective action or closure of waste units that reside outside the main operating area.

In April 2010, DOE and Ohio EPA entered into *The April 13, 2010 Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action, including the July 16, 2012 Modification thereto* (DFF&O) (Ohio EPA 2012). The DFF&O defines the steps for identifying a range of technical alternatives for the D&D project and for reaching formal decisions on how best to proceed. The steps include developing viable alternatives, evaluating and comparing them, gaining public feedback on the range of alternatives, selecting a final approach, and formalizing the decisions.

### **3. COMMUNITY PARTICIPATION**

The Proposed Plan for the Waste Disposition Project at PORTS in Piketon, Ohio, was made available to the public on October 29, 2014. It, along with the supporting Remedial Investigation/Feasibility Study (RI/FS), can be found in the Administrative Record File, located at the DOE Environmental Information Center, 1862 Shyville Road, Room 207, Piketon, Ohio. The reports are also available through the DOE Portsmouth Paducah Project Office website [www.pppo.energy.gov](http://www.pppo.energy.gov) and the Fluor-B&W Portsmouth LLC website [www.fbportsmouth.com](http://www.fbportsmouth.com). A public comment period was held from November 12, 2014 through March 11, 2015. In addition, a general public meeting was held on November 17, 2014 to present the Proposed Plan to the community. At this meeting, representatives from DOE and Ohio EPA answered questions about PORTS and potential remedial actions. The DOE responses to comments received at the meeting and comments submitted in writing during the public comment period are included in the Responsiveness Summary, which is Part 3 of this Record of Decision (ROD).

In addition to the formal public comment period, DOE had engaged members of the PORTS Site Specific Advisory Board, along with County Commissioners from Pike, Scioto, Ross, and Jackson counties. DOE worked closely with Tribal Nations, the Ohio Historic Preservation Office (OHPO), the Advisory Council on Historic Preservation, and individual members of the public interested in historic preservation to identify mitigation measures for any impacted historic properties. The Waste Disposition RI/FS and the Proposed Plan incorporated consideration of the input received from these various sources.



#### 4. SCOPE AND ROLE OF RESPONSE ACTION

The waste disposition remedy decision provides a disposition approach for D&D waste anticipated to be generated during remediation of PORTS. Wastes not generated under the DFF&O are anticipated to be generated during the cleanup of PORTS. These waste streams will be generated pursuant to a different regulatory decision framework than the DFF&O. The RI/FS recognized the possibility that this additional waste could be disposed in the potential On-Site Disposal Cell (OSDC), assuming the required authorizations/approvals, as applicable, are obtained, by separately analyzing the general impacts and implications attributed to the possible disposal of these non-DFF&O wastes. This ROD does not provide Ohio EPA authorization/approval, as applicable, for the excavation, treatment if necessary, and disposal decisions for these other wastes. Nevertheless, DOE has evaluated the environmental impact, if any, of the excavation and disposal. DOE's analysis has determined that placement of this waste in the OSDC will be protective of human health and safety and the environment, assuming such waste meets the waste acceptance criteria (WAC).

To clarify the regulatory authorities that apply to the various waste streams considered in this decision, each waste stream discussed throughout the rest of the document is identified by a regulatory category (RC). Likewise, this decision also discusses the form that the waste stream takes that is relevant to assumptions made about shipping and placement of the waste stream. To clarify which form the waste stream takes, each waste stream is also identified by an engineering category (EC). The RCs and the ECs are defined in Table 2.

**Table 2. Regulatory and Engineering Categories of PORTS Wastes/Materials**

Category	Definition
<b>Regulatory Categories</b>	
RC-1	DFF&O waste including building D&D waste and residual soil as defined in the DFF&O.
RC-2	Ohio Consent Decree waste.
RC-3	Non-DFF&O, Non-Ohio Consent Decree waste composed of previously interred waste in closed waste management units.
RC-4	Other waste for which DOE is a responsible party, including but not limited to CERCLA actions that are not addressed within RC-1, RC-2 or RC-3.
<b>Engineering Categories</b>	
EC-1	Soil and soil-like materials or wastes.
EC-2	Non-soil like, non-liquid waste that generally require EC-1 materials or wastes to achieve compaction requirements for placement in the OSDC.

CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended  
 D&D = decontamination and decommissioning  
 DFF&O = *The April 13, 2010 Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action, including the July 16, 2012 Modification thereto*

DOE = U.S. Department of Energy  
 EC = engineering category  
 OSDC = on-Site disposal cell  
 RC = regulatory category

Whenever excavation and/or disposal of non-DFF&O waste (Categories RC-2, RC-3, RC-4) is discussed in this document, whether in terms of additional waste or fill, it is to be understood that additional authorization/approval, as applicable, would be required to undertake this activity.

## 5. SITE CHARACTERISTICS

The PORTS Facility straddles a broad, undulating, sediment-filled, ancient river valley (the abandoned Portsmouth River channel) situated approximately 130 ft above the Scioto River floodplain, which lies to the west. The former river valley runs north to south through the industrialized area of PORTS and is bounded on the east and west by ridges and low-lying hills. The surface of PORTS is modified by more recent streams.

### 5.1 GEOLOGY AND HYDROGEOLOGY

The geology of the PORTS Facility has been characterized over the years by the installation of more than 1,600 soil borings and wells. The PORTS area consists of approximately 30 to 40 ft of sediments (silt, clay, sand, and gravel), which formed the Portsmouth River valley. These sediments are in the Gallia sand/gravel and Minford clay/silt seen in Figure 3. Bedrock hills extend to the east and west areas of the DOE reservation outside of the old valley.

The bedrock beneath PORTS is comprised of Bedford shale, Berea sandstone, Sunbury shale, and Cuyahoga shale. No known geologic faults are located in the immediate area. The Sunbury shale, seen as the gray layer in Figure 3, averages about 15 to 20 ft in thickness. The Sunbury shale is considered to be an aquitard, a rather impervious layer that does not easily allow water to pass through.

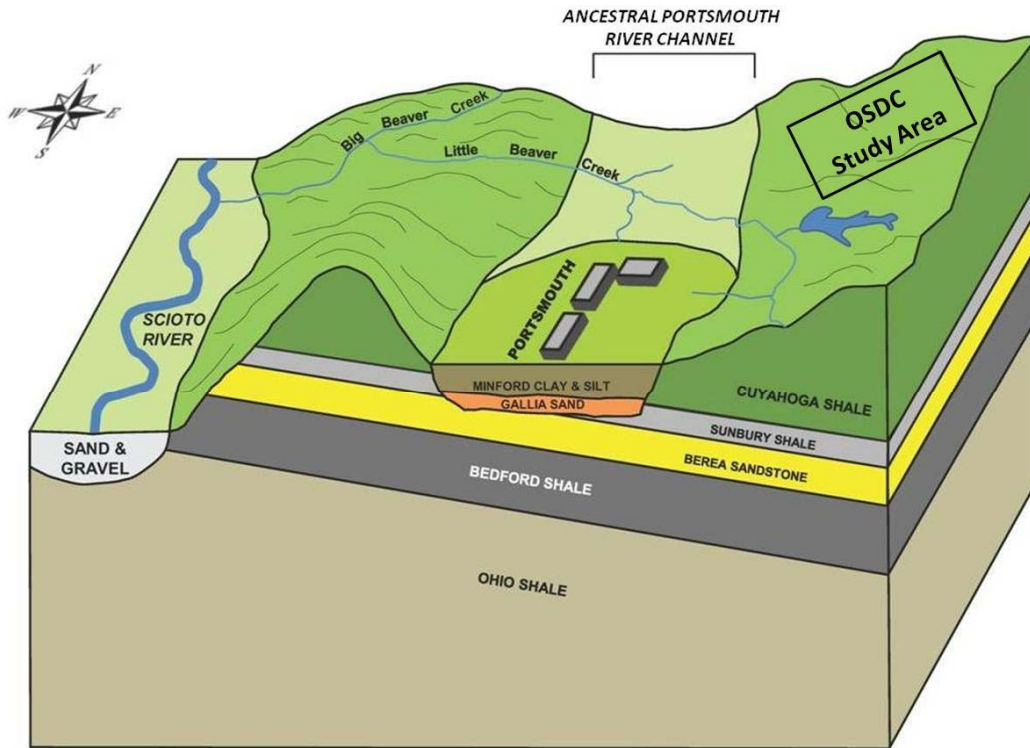


DIAGRAM IS VERTICALLY EXAGGERATED AND NOT TO SCALE

**Figure 3. Schematic Block Diagram Showing Geological Relationships at PORTS**

The Cuyahoga shale, the youngest and uppermost bedrock formation in the geographic area, forms the hills surrounding PORTS. It is a moderately hard, thinly laminated shale that regionally reaches a thickness of approximately 160 ft and has numerous interbedded sandstone and siltstone laminations.

The Cuyahoga Formation was deposited in an offshore, quiet water environment, perhaps on the distal margin of a delta. Most of the sandstone layers within the Cuyahoga are very thin (less than 3 in. thick), but occasionally a thicker layer (1 to 5 ft thick) is encountered in the region. The Cuyahoga shale is not found beneath the industrial portion of PORTS.

Groundwater flow at PORTS is located in the Berea sandstone and the Gallia sand and gravel (both local aquifers).

## **5.2 INFRASTRUCTURE**

Because of the nature of its original mission, PORTS is equipped with significant infrastructure, including a water distribution system, an electrical supply and regional distribution system bringing power to PORTS, a high-pressure fire water system, a wastewater collection system, an existing natural gas service, and numerous existing rights-of-way with pipelines. During D&D, utilities such as steam, power, and water must be maintained to support current tenants (e.g., American Centrifuge Plant and Depleted Uranium Hexafluoride Plant).

## **5.3 CULTURAL RESOURCES**

PORTS and its surrounding area have both prehistoric and historic cultural resources. Cultural resources include any prehistoric or historic district, site, building, structure, or object resulting from, or modified by, human activity. Under federal regulations (36 *Code of Federal Regulations [CFR]* 800), federal agencies must assess the impacts their actions have on historic properties and, if they are present, avoid, minimize, or mitigate adverse effects. Historic properties are cultural resources listed in, or eligible for listing in, the National Register of Historic Places (NRHP) because of their significance and integrity.

In 1996 and 1997, a Phase I archaeological survey of PORTS was performed. Collection of information about potential archaeological sites continued through 2013. The surveys identified four sites eligible for the NRHP, two of which are located near where the OSDC will be located. One site will be directly affected by OSDC construction activities. DOE is currently working with the Tribal Nations and the OHPO to ensure appropriate mitigation measures are implemented for the archaeological site that will be directly impacted by construction activities. The second site is located near the project area and will be avoided. The two archaeological sites are eligible for listing on the NRHP and contain prehistoric Native American artifacts such as flakes and tools.

Architectural surveys have also been completed since 1996, to identify and document potentially historical buildings and structures at PORTS. No architectural resources are located in the areas to be impacted by waste disposition activities.

## **5.4 NATURAL RESOURCES/ECOLOGY**

Past consultations with the U.S. Fish and Wildlife Service (USFWS) indicate that some of the areas at PORTS may be suitable summer habitat for the Indiana bat (*Myotis sodalis*), a federal- and state-listed endangered species. This is the only federally-listed endangered species whose home range includes PORTS. Information from the Ohio Department of Natural Resources identified several state-listed endangered, threatened, and special interest species within 1 mile of PORTS; however, database searches did not identify any such species within the PORTS boundary. Several surveys have been conducted, including one as recently as 2013, but no Indiana bats have been found. Coordination with USFWS will ensure steps are taken to avoid impacts to Indiana bats.

In late 2013, near the completion of the RI/FS process, the northern long-eared bat (*Myotis septentrionalis*) was proposed by the USFWS as federal-listed endangered species. Surveys

conducted earlier in 2013 did identify a number of northern long-eared bats in the area proposed for the OSDC. USFWS made a final decision to list the northern long-eared bat as a threatened species in April of 2015. Coordination with USFWS to date has resulted in an agreement to limit tree clearing to when the bat is not raising their young to avoid impacting potential bats during nesting. There is also suitable, available habitat contiguous with the impacted area, further minimizing long-term impacts to the northern long-eared bat. DOE will work closely with USFWS to implement other measures to protect the bat, as appropriate.

There are several wetlands present or near the likely footprint of the OSDC and planned accompanying haul road. Roughly 0.35 acre of 4.2 acres of Study Area D wetlands will be directly affected by construction activities. A recent study found 24 wetlands near the construction area for the OSDC and the haul road. Significant efforts went into siting the activities to minimize impacts on these wetlands. Several other wetlands could be indirectly impacted, but appropriate water flow control and siltation control will be used to minimize indirect impacts. Intermittent streams that cross the OSDC location will be impacted. It is estimated that 14,335 linear ft of the 36,942 linear ft of streams in Study Area D will be impacted. Of those, 2,419 linear ft are classified as Class IIIA Primary Headwater Habitat (PHWH).

## **5.5 CONTAMINATION**

The main contaminants contributing to excess lifetime cancer risks (ELCR) and hazards that will be in the DFF&O waste (RC-1) that must be disposed under this decision include: degreasing solvent (TCE); heavy metals such as chromium and mercury; PCBs (from electrical transformer oils and ductwork gaskets); radioactive elements, particularly uranium and technetium-99; and asbestos in building materials.

Some operations and maintenance activities at PORTS involved hazardous conditions and the potential for exposure of personnel and the environment to radioactive and chemical ELCRs and hazards. Radioactive or hazardous materials were spilled or released to the environment from production-related facilities and attendant work activities. Contamination has generally been restricted to the buildings, underlying soil, and groundwater plumes. Contaminated groundwater is currently primarily confined to the DOE property with the use of groundwater containment systems.

## **5.6 PROJECT WASTE VOLUMES AND WASTE FORMS**

Volume estimates of all waste (RC-1, RC-2, RC-3, RC-4, EC-2) anticipated to be generated as part of the cleanup of PORTS, along with anticipated fill volumes (RC-2, RC-3, EC-1) estimated to be needed, resulted in a total OSDC capacity requirement of 5 million cy. It is anticipated that 107,000 cy of waste (RC-1) will be sent off Site for disposal and another 110,000 cy of material may be a candidate for recycling and/or reuse. The volume estimates evolved from field studies, process knowledge, facility walkdowns (including measurements of building structures and components), and engineering studies, including review of as-built drawings.

The vast majority of D&D waste (RC-1) and material volume (i.e., approximately 75 percent or 1.0 million cy) expected to be generated during D&D of PORTS will originate from the three process buildings (i.e., X-326, X-330, and X-333).

## **6. CURRENT AND POTENTIAL FUTURE LAND AND RESOURCE USES**

PORTS is currently an industrial facility, and industrial reuse of PORTS is the current and reasonably anticipated future land use. DOE provided a grant to Ohio University to significantly engage the

community on the future of PORTS. This effort was called the PORTSfuture Project; the full project report can be found at [www.portsfuture.com](http://www.portsfuture.com). This study confirmed that jobs and economic concerns are the most important issues that the region faces, as evidenced by the following statistics:

- 83 Percent of a 998-person survey listed jobs/economy/business development as the most important issue to this community.
- Considering the role of jobs and the economy, more than 75 percent of 747 survey respondents indicated that PORTS is very important to the future of the community.
- After extensive work to create community-driven future use scenarios for PORTS, 95 percent of the votes were cast for some type of job-creating future use.

Beneath the facility, the groundwater yield is often too low, because of low aquifer transmissivity, to support municipal or industrial water supplies. Domestic water supplies are obtained for unconsolidated deposits in the preglacial buried valley aquifer, major tributaries of the Scioto River, or fractured bedrock encountered during drilling.

## **7. SUMMARY OF SITE RISKS**

The RI/FS presents a streamlined evaluation of the potential threat to human health, safety, and the environment from the no-action conditions associated with not disposing of D&D waste (RC-1) that would result from allowing the buildings and structures to degrade under a no action scenario. Because of the nature of the decision, the DFF&O provided that a streamlined risk evaluation was sufficient to determine if action was needed. This streamlined evaluation of potential threats to human health and the environment is based on no-action conditions. Under these conditions, the former GDP buildings/structures and infrastructure at PORTS are assumed to no longer undergo surveillance and maintenance (S&M). Existing security and DOE access controls are eliminated, and the resultant condition is that the facilities degrade and ultimately release currently contained contamination. This streamlined evaluation has used PORTS-specific risk guidance for conducting both human health and ecological risk assessments. The human health portion of the evaluation is based on *Methods for Conducting Human Health Risk Assessments and Risk Evaluations at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (DOE 2013a). The ecological portion of the evaluation is based on *Methods for Conducting Ecological Risk Assessments and Ecological Risk Evaluations at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (DOE 2013b).

### **7.1 HUMAN HEALTH RISK ASSESSMENT**

The risk evaluation used the sources, migration pathways, and potential receptors described in the RI/FS report to develop a conceptual site model (Figure 4) to understand the potential threats under the no action scenario.



The process buildings, complex facilities, and supporting facilities contain numerous radiological and chemical contaminants that are known carcinogens and/or toxicologically hazardous substances. Under the reasonably anticipated future use scenarios, it is anticipated that the expected concentrations of contaminants of concern (COCs) in all applicable exposure media for receptors presented in this streamlined evaluation of threats to human health are at levels exceeding typical risk-based standards (DOE 2013a). Table 3 shows the potential completed pathways for the COCs discussed above, should the buildings be allowed to deteriorate and no action is taken to remediate the buildings and complex facilities or dispose of the D&D waste (RC-1). Unacceptable exposures to human receptors from release of these contaminants are likely to occur. As noted in Table 3, potential exposures to contaminants present within and on equipment and building materials likely result in unacceptable risks to all three hypothetical future on-PORTS receptors. In addition, potential exposures to contaminants in soil, sediment, and groundwater likely result in unacceptable risks to an on-PORTS industrial worker and an on-PORTS resident. A trespasser could be exposed to contaminants in the residual D&D waste (RC-1) material.

**Table 3. Summary of Building Contaminants of Concern and Potential Completed Pathways at PORTS**

Media	COC	On-PORTS Trespasser	On-PORTS Industrial Worker	On-PORTS Resident
		Exposure Route		
Building Waste	ACM	Inhalation	Inhalation	Inhalation
	PCB	Ingestion/Dermal	Ingestion/Dermal	Ingestion/Dermal
	TCE	Inhalation	Inhalation	Inhalation
	Uranium	Ingestion/Inhalation	Ingestion/Inhalation	Ingestion/Inhalation
	U Isotopes	Ionizing Radiation	Ionizing Radiation	Ionizing Radiation
	Tc-99	Ionizing Radiation	Ionizing Radiation	Ionizing Radiation
	Chromium	Ingestion/Inhalation	Ingestion/Inhalation	Ingestion/Inhalation
Soil/Sediment	PCB		Ingestion/Dermal	Ingestion/Dermal
	Uranium		Ingestion/Inhalation	Ingestion/Inhalation
	U Isotopes		Ionizing Radiation	Ionizing Radiation
	Chromium		Ingestion/Inhalation	Ingestion/Inhalation
Groundwater	TCE		Ingestion	Ingestion
	Tc-99		Ingestion	Ingestion
	Uranium		Ingestion	Ingestion
	Chromium		Ingestion	Ingestion/Inhalation

Tc-99 = technetium 99  
 U = uranium

ACM = asbestos-containing material  
 COC = contaminant of concern  
 PCB = polychlorinated biphenyl

PORTS = Portsmouth Gaseous Diffusion Plant  
 TCE = trichloroethene

## 7.2 ECOLOGICAL RISK ASSESSMENT

The streamlined ecological risk assessment consisted of a review of historical ecological risk assessments conducted at PORTS. The result of the original baseline ecological risk assessment (BERA), completed earlier under the Ohio Consent Decree, illustrates which contaminants have historically had the potential to impact ecological receptors at PORTS. Some of these contaminants are from historical building releases, which could indicate the types of impacts that may be seen in the future under a no-action alternative. For Quadrants II and IV, the COCs identified in the BERA were chromium, mercury, and PCBs. Sufficient quantities of these contaminants may remain in buildings and associated waste (RC-1)

in these quadrants to cause increased impacts to receptors if they are released and migrate to associated exposure media. It is likely that PCB concentrations in the on-PORTS environment may increase from facilities in these quadrants in the future if no action is taken on the buildings and associated waste (RC-1). Wildlife communities could be impacted from future releases. Chromium and mercury concentrations are also likely to increase as the buildings degrade and release contaminants. Therefore, based on PORTS operations and the likelihood of further releases of these contaminants into the environment in sufficient quantities, chromium, mercury, and PCBs are identified as COCs for the qualitative buildings ecological risk assessment.

In the BERA, no unacceptable risks from past operations were identified for ecological endpoints in the Big Run Creek watershed (northwestern or western tributaries). There were indications of zinc toxicity impacts to the alluvial soil plant communities in the southwestern tributary (Quadrant I). Zinc is not identified as an ecological COC from facilities within this quadrant. Based on these results, it is unlikely that further releases from buildings or waste (RC-1) might impact ecological receptors. No ecological COCs from Quadrants I and III are identified for the buildings.

The results of this qualitative, streamlined evaluation of threats to ecological receptors indicate that there are potential unacceptable impacts to on-PORTS ecological receptors from the no-action alternative.

The response action selected in this ROD is necessary to protect public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment.

## **8. REMEDIAL ACTION OBJECTIVES**

Remedial action objectives (RAOs) set goals that ensure protection of human health and the environment. The purpose of this action is to make a waste disposition decision to address D&D waste (RC-1) generated from PORTS remediation efforts. Before response action alternatives were developed for consideration, a list of RAOs that must be achieved was identified. According to U.S. Environmental Protection Agency (EPA) RI/FS guidance (EPA 1988), RAOs consist of medium-specific goals for protecting human health and the environment. There are no chemical-specific applicable or relevant and appropriate requirements (ARARs) to guide selection of medium-specific goals as part of RAOs for this action because this decision is not an environmental remediation decision. Such goals are not appropriate for consideration of waste disposition options. However, the DFF&O recognizes that the goal of any alternative must be to meet ARARs, be protective, and be cost-effective.

Broad RAOs were developed to control the potential future risk identified in Table 3 associated with a no action alternative. As described in Section 6, industrial use is the most reasonable foreseeable land use; therefore, protection of an industrial user along with protection of the environment, serve as the bases of the Waste Disposition RAOs presented below. In addition to actions required by this ROD, actions under other regulatory authorities will be required to completely address all current and future potential risks at PORTS.

The Waste Disposition RAOs are presented below:

- Prevent uncontrolled storage or staging of waste piles. Waste generated from demolishing structures at PORTS (RC-1) or from the natural degradation of the structures must be disposed in compliance with the substantive provisions of the ARARs/to-be-considered (guidance) (TBCs) in Appendix A.



- Implement the final disposition of wastes (RC-1) in a manner that ensures human and ecological receptors are protected from radiological and non-radiological contaminants. For an on-Site alternative, the RAO is satisfied by developing WAC that eliminate human exposures to contaminants that exceed a cumulative human health ELCR of  $1 \times 10^{-5}$  or a cumulative hazard index of 1. For an off-Site alternative, the RAO is satisfied by meeting the representative off-Site facility's approved WAC.
- Control the migration of contaminants from the wastes (RC-1) that could cause adverse groundwater and surface water impacts. For an on-Site alternative, the RAO is satisfied through the development of WAC that prevent the migration of contaminants that will cause an exceedance of ambient water quality criteria in surface water and maximum contaminant levels in groundwater (at the waste boundary) for a performance period of 1,000 years. For an off-Site alternative, the RAO is satisfied by meeting the representative off-Site facility's approved WAC.

## **9. DESCRIPTION OF ALTERNATIVES**

Three alternatives were developed for evaluation in the RI/FS. These were the no-action alternative, an alternative that primarily disposes of waste on Site with some off-Site waste disposal, and an alternative that disposes of all waste off Site.

### **9.1 ALTERNATIVE 1 – NO ACTION**

Alternative 1 is the no-action alternative. The no-action alternative is required to establish and document baseline conditions and provide a basis for comparison to the other remedial action alternatives. This alternative consists of no D&D of the buildings and no waste (RC-1) disposal. Actions authorized by regulatory authorities outside of the DFF&O would continue. As discussed in Section 7, under no action, buildings would eventually degrade, resulting in releases of contaminants with migration to where exposures to human and ecological receptors may occur. Further, this alternative does not consider controls necessary to prevent access to the facilities and the associated physical hazards they present. The following are key components of this alternative:

- Buildings would not be demolished but instead would be left to degrade.
- No waste would be managed; therefore, associated radiological and hazardous constituents would remain.
- No item would be recycled and/or reused.
- No S&M of the facilities to prevent degradation would occur.
- No institutional controls would be implemented to control access to radioactive or hazardous waste constituents.

### **9.2 ALTERNATIVE 2 – ON-SITE DISPOSAL/OFF-SITE DISPOSAL**

This alternative involves siting and constructing an engineered OSDC with operation of the facility for disposal of anticipated PORTS D&D waste (RC-1). Waste not meeting the facility WAC will be shipped to appropriate off-Site disposal facilities.

The decision to use non-DFF&O contaminated soil for fill in the OSDC is contemplated in this decision; however, additional regulatory authorization/approval, as applicable, would be required to excavate, treat if necessary, and dispose of this fill. Accordingly, DOE will seek appropriate regulatory authorization/approval, as applicable, to excavate, treat if necessary, and dispose of such non-DFF&O contaminated soil as fill in the OSDC.

Key components of this alternative include the following:

- Requires a final WAC that meets all ARARs and is in compliance with the DFF&O for any constructed OSDC. The Ohio EPA-approved WAC consists of seven components, which are outlined in the DFF&O: (1) prohibited items resulting from ARARs or DOE decisions or agreements; (2) activity criteria and chemical concentration criteria (radiological levels and other contaminant levels); (3) waste evaluation and characterization standards (methods used in the field to verify waste can go into a potential OSDC); (4) waste physical characteristics standards (size and shape of items); (5) waste packaging standards; (6) waste safe handling standards; and (7) waste transportation standards. Several of the components (3 through 7) of the final WAC will require refinements after the final design is completed. Such refinements for these WAC components will be reviewed and approved by Ohio EPA in future OSDC-related regulatory documents as required by the DFF&O.
- Provides for transportation and disposal of D&D waste (RC-1) meeting the WAC in the OSDC, with waste not meeting the WAC either treated (under this decision or under the decisions generating waste) or shipped by truck or rail and disposed off-Site at disposal facilities approved for receipt of such waste.
- Provides for transportation and disposal of non-radiologically contaminated and non-hazardous D&D waste (RC-1) to the OSDC or at an appropriately permitted local, off-Site solid waste disposal facility.
- Provides for construction and operation of centralized size reduction or decontamination process and/or storage of recovered materials in support of recycling and/or reuse initiatives
- Consideration and evaluation of a complex centralized treatment system to support future recycling opportunities. Centralized treatment in this context refers to complex, non-commercial, ARAR-compliant treatment efforts. Actual implementation of these efforts would require a modification to this ROD or an additional decision document.
- Provides for the design, construction, and operation of the OSDC in Study Area D satisfying both design-based and performance-based requirements of DOE and other substantive requirements and guidance developed and documented in the ARARs/TBCs for the on-Site alternative. The OSDC is envisioned to be built in modular fashion with individual lining systems so as to ensure sufficient capacity is available to support D&D activities and the disposition of D&D waste, but without the program risk of developing disposal capacity that will not be used.
- Requires the construction of all infrastructure supporting the OSDC in compliance with ARARs, including wastewater treatment designed for the waste constituents and throughput from anticipated leachate from any on-Site landfill operations, as well as contact water that may be generated. Infrastructure to collect and evaluate storm water will also be developed.

- Requires the construction of other infrastructure supporting the OSDC in compliance with ARARs, including haul roads, rail yard upgrades, and other waste conveyances, as appropriate, to transport waste from the generation area to the OSDC.
- Provides for fill material, for purposes of supporting waste placement in the OSDC, which is anticipated to be from on- and/or off-PORTS borrow locations. If non-DFF&O contaminated soil is used, it would be from on-PORTS. If non-DFF&O contaminated soil is used as fill, which this remedy contemplates, additional regulatory authorizations/approvals, as applicable, will be required to excavate, treat if necessary, and dispose of this fill in the OSDC. Accordingly, DOE will seek appropriate authorizations/approvals, as applicable, to allow placement of such non-DFF&O contaminated soil as fill in the OSDC.
- Allows for the construction and operation of a waste staging area (Intermediate Material Transfer Area [IMTA]) to support the OSDC where waste could be held on a non-permanent basis, such as when operations at the OSDC are temporarily closed or for operational optimization. This staging area will provide for the temporary staging of waste (and, if needed, centralized size reduction or treatment of waste, in accordance with ARARs) for logistics purposes to support the optimal placement of waste requiring fill (EC-2) and soil (EC-1) in the OSDC.
- Requires institutional controls at the OSDC to prevent access to the waste in the future in compliance with ARARs.
- Requires long-term maintenance, surveillance, and monitoring in compliance with ARARs.
- Designates the OSDC as a treatment, storage and disposal Corrective Action Management Unit (CAMU) and the adjacent staging area, the IMTA, as a treatment and storage CAMU, both under *Ohio Administrative Code (OAC) 3745-57-72*. Defines an area of contamination to be the area at PORTS with continual/contiguous contamination.
- Provides for transportation on Site from where the waste is generated to the disposal location.
- Allows for treatment in three cases:
  - Centralized treatment such as size reduction and decontamination by physical or chemical (washing) processes to allow waste to meet an on-Site or off-Site WAC or recycling and/or reuse requirements. The location of a centralized treatment system can be anywhere on Site, including near the OSDC.
  - Treatment of any DFF&O waste that may be conducted at an off-Site disposal facility prior to disposal. DOE will obtain the necessary approvals/authorizations, as applicable, and will meet all applicable requirements, including meeting the WAC, for the on-Site disposal of any DFF&O waste which is treated off-Site and returned to DOE for disposal in the OSDC/CAMU.
  - Treatment of secondary wastes (those generated from OSDC operations), including wastewater and/or leachate, residual soil, and non-DFF&O contaminated fill with additional regulatory authorization/approval, as applicable (in compliance with ARARs and/or other regulatory requirements to meet the OSDC WAC).

- Allow for consideration (evaluation, treatability studies, etc.) of decontamination treatment efforts that require construction of complex treatment systems to support recycling and/or reuse activities over those defined above. Modifications to this ROD would be needed to address the details of any such complex system.
- Requires the off-Site disposal and/or treatment of any D&D waste or non-DFF&O contaminated soil intended for use as fill that does not meet the WAC for the OSDC. All WAC of off-Site disposal facilities that are used must be met.
- Allows for additional off-Site disposal or recycling and/or reuse of waste or materials at DOE discretion, assuming the off-Site disposal facility WAC and associated recycling criteria are met.
- Allows for the storage of any nickel recovered for recycling and/or reuse. The storage will be implemented in compliance with ARARs and in a way to ensure safe, long-term protectiveness.
- With proper authorizations/approvals, as applicable, the remedy allows waste generated from activities outside the scope of D&D (referred to as non-DFF&O waste) to be disposed in the OSDC.

The presence of the OSDC will provide the potential for on-Site disposal of wastes generated through the conduct of cleanup activities outside of the DFF&O (RC-2, RC-3, RC-4). Such waste could include, with the appropriate authorizations/approvals, non-DFF&O wastes and other materials generated during cleanup activities (RC-2, RC-3, RC-4).

### **9.3 ALTERNATIVE 3 – OFF-SITE DISPOSAL**

Under this alternative, anticipated waste (RC-1) would be disposed off Site at disposal facilities approved to accept DOE-generated waste. The DOE-approved off-Site disposal facilities could be a DOE disposal facility and/or commercial facilities authorized to accept low-level (radioactive) waste (LLW), Toxic Substances Control Act of 1976 (TSCA) waste, hazardous waste, and/or construction and demolition debris and solid waste or any combination of these waste. Recycling and/or reuse facilities also would be considered.

Key elements of this alternative include the following:

- Most waste anticipated to be generated by PORTS D&D projects (RC-1) would be managed as radioactive, hazardous, construction and demolition debris, solid, and/or TSCA (PCB) waste or some combination, and would be transported and dispositioned at off-Site, approved DOE and commercial disposal facilities.
- Waste (RC-1) that does not require management as either a radioactive and/or hazardous waste would be shipped and disposed at a local, off-Site solid waste landfill, as appropriate.
- Recycling and/or reuse of materials
- Off-Site transportation by truck and rail
- Infrastructure upgrades, such as to roads and the rail yard
- Construction and operation of centralized size reduction or decontamination processes and/or storage of recovered materials in support of recycling and/or reuse initiatives

- Consideration and evaluation of a complex centralized treatment system to support future recycling opportunities. Centralized treatment in this context refers to complex, non-commercial, ARAR-compliant treatment efforts. Actual implementation of such efforts would require a modification to this ROD or an additional decision document.

The expected outcome of this alternative is to provide safe final disposal for D&D waste (RC-1). All the waste would be disposed off Site. The disposal facility would be permitted. Underlying groundwater and adjacent surface water at all disposal locations would be protected.

## **10. SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES**

This comparative analysis evaluates the relative ability of the alternatives to meet the nine Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA) and other evaluation criteria.

### **10.1 CERCLA CRITERIA**

#### **10.1.1 Overall Protection of Human Health and Environment**

This evaluation criterion assesses each alternative's ability to protect human health and the environment and comply with project-specific RAOs.

The no-action alternative is not considered to be protective. It allows the continued degradation of buildings and the accumulation of waste across PORTS. This waste can be a future risk to on-PORTS receptors, both human and ecological. Both of the action alternatives are protective. Extensive engineering controls provide protection of human health and the environment, both in the short term and long term. The off-Site disposal alternative may be more protective over the long term (after at least 1,000 years) because EnergySolutions and the Nevada National Security Site (NNSS), the representative disposal facilities for most wastes, are in an arid environment. Overall long-term protection provided by the on-Site alternative (Alternative 2) is acceptable as shown by the fate and transport modeling performed to evaluate WAC for the OSDC and by assessing the impacts if the leachate collection/treatment system were to fail. The effectiveness of institutional controls in restricting actions always has some long-term uncertainty, but it is similar between on-Site and off-Site disposal.

Both action alternatives will require local and long-distance transportation of construction material and waste. Construction of the OSDC or the significant off-Site transport of waste (RC-1) will increase the probability of normal industrial or transportation accidents. Because of the greater volumes of waste shipped over long distances, transportation risks are greater for the off-Site alternative.

#### **10.1.2 Compliance with ARARs/TBCs**

This criterion addresses compliance with federal and state environmental requirements that are either applicable or relevant and appropriate. Appendix A contains the selected remedy's location- and action-specific ARARs/TBCs, such as those related to construction, operation, closure, and maintenance of the OSDC and treatment that may be needed. Section 13.2 provides more details on how the ARARs are met.

No ARARs/TBCs are directly associated with the no-action alternative.

The OSDC will be designed to meet all ARARs/TBCs except for a solid waste siting requirement in the OAC. No location on PORTS suitable for constructing a disposal facility could meet all siting

requirements or other ARARs. The Ohio siting criterion under *OAC 3745-27-07(H)(4)(d)*, which requires a setback of 200 ft from a stream, lake, or wetland for solid waste placement in a sanitary landfill facility, will need to be waived in accordance with the DFF&O and consistent with CERCLA Section 121(d) and 40 *CFR* 300.430(f)(1)(ii)(C)(2) for this on-Site disposal alternative.

The basis for this ARAR waiver is the greater risk to human health and the environment posed by any attempt to move the footprint of the OSDC in any direction or place it at an entirely new study area to avoid the small portions of the unnamed intermittent streams that are within 200 ft of the landfill waste placement footprint in Study Area D. Based upon the extensive engineering analysis and sensitive resource investigation completed as part of the FS, moving the cell footprint to avoid the small intermittent streams could cause even greater potential damage and violate ARARs associated with protecting more extensive and sensitive resources such as drinking water wells, a groundwater aquifer, sensitive resource wetlands, coldwater and exceptional warmwater habitat streams, and human residences, as well as violate ARARs related to federal depth-to-groundwater-table requirements and state property boundary line requirements.

Certain location-specific ARARs for Alternative 2 will require mitigation of adverse impacts, but these impacts and requirements are expected to be minimal, and mitigation will be readily implementable.

The off-Site alternative would comply with all ARARs/TBCs for on-Site activities in connection with the transportation of D&D waste (RC-1).

### 10.1.3 Long-term Effectiveness and Permanence

This criterion evaluates an alternative's ability to achieve overall reduction in risk to human health and the environment and to provide sufficient long-term controls and reliability. It considers the degree to which the alternative provides sufficient engineering, operational, and institutional controls; the reliability of those controls to maintain exposures to human and environmental receptors within protective levels; and the uncertainties associated with the alternative over the long term.

The no-action alternative is not effective at achieving RAOs. All of the action alternatives are effective at protecting human health and the environment. The off-Site disposal alternative may offer a slightly higher level of long-term protectiveness because the arid climate and hydrogeology offer the highest potential for permanence of containment. Alternative 3 would remove 100 percent of the curies in the buildings while Alternative 2 will remove a smaller amount (but still the majority of curies) from PORTS by removing those waste streams that do not meet the WAC. On-Site disposal will be protective for at least 1,000 years (modeling indicates beyond 1,000 years) with regard to the total curies and other amounts of disposed contaminants. The wetter PORTS climate could be considered to be less protective than the arid off-PORTS climates, but the WAC and cell designs accommodate the wetter climate.

Preventing exposure to contaminants placed in any disposal cell over the long term depends on the success of engineered barriers and institutional controls. The OSDC cover and intrusion barrier will be designed to discourage penetration of the cover by humans, burrowing animals, or tree roots. Institutional controls will restrict access and prohibit actions that could penetrate the cover and expose the waste. While the cover remains in place, migration of contaminants into groundwater and surface water is the only credible pathway for exposure. Modeling indicates that exposures will be within an acceptable risk range at the designated receptor locations downgradient of the disposal cell. This assumes that the disposal cell remains intact, it performs as predicted, and institutional controls adequately prevent unacceptable uses of the disposal location. However, calculations show that even if the leachate

collection/treatment system fails, releases of leachate to the adjacent surface water bodies will not cause an unacceptable impact.

The off-Site disposal alternative also relies on institutional controls at the off-Site disposal facilities to prevent inadvertent intrusion. The engineered barriers to intrusion and waste migration at **EnergySolutions and NNSS** are similar in nature and reliability to the barriers proposed for the OSDC. Therefore, the risk of direct exposure to the waste would be similar for the on-Site and off-Site alternatives. EnergySolutions and NNSS, where most wastes (LLW, TSCA, and mixed wastes) are assumed to be disposed, are in arid environments (far from population centers) that reduce the likelihood of contaminant migration or exposure via groundwater or surface water pathways.

Other than replacement of woodland habitat with grass and shrub habitat at the disposal cell, long-term environmental impacts from the on-Site alternative will be small. For the off-Site alternative, the long-term environmental impacts from the incremental increase in disposal volume at the existing off-Site facilities would be negligible.

Land use within the long-term institutional control boundary of the OSDC will be restricted. Other areas used during construction and operation will be released for alternate use after facility capping.

#### **10.1.4 Reduction of Toxicity, Mobility, or Volume through Treatment**

This criterion reflects the statutory preference for remedial action alternatives to substantially reduce toxicity, mobility, or volume of hazardous substances through treatment. There are several types of treatment that may be used, if needed to meet U.S. Department of Transportation (DOT) or WAC requirements, including recycling and/or reuse requirements, either under Alternative 2 or Alternative 3. Potential treatment activities include:

1. Centralized treatment, if needed, to meet recycling and/or reuse, DOT, or WAC requirements (such as size reduction and decontamination) (both alternatives)
2. Treatment, if needed, at an off-Site disposal facility prior to disposal (both alternatives)
3. Treatment of OSDC-operations waste; OSDC secondary waste, including wastewater and/or leachate. Also, with appropriate authorizations/approvals, as applicable, and in accordance with ARARs and/or other appropriate requirements, non-DFE&O contaminated soil as fill (RC-2, RC-3) (dewatering and any treatment needed to meet the OSDC WAC) (just Alternative 2).

Generally, the reduction of toxicity, mobility, or volume for individual waste streams through treatment will be evaluated in decision documents where waste preparation for dispositioning is discussed. However, if treatment is needed in any of the three cases mentioned above, minor quantities of waste in either action alternative would have a reduction in toxicity, mobility, or volume.

#### **10.1.5 Short-term Effectiveness**

This criterion addresses the effects on human health and the environment posed by implementing the alternative. Potential impacts are examined, as well as appropriate mitigation measures for maintaining protectiveness for the community, workers, environmental receptors, and potentially sensitive resources.

The no-action alternative would present no specific short-term risks to the community or workers. The on-Site disposal alternative presents the greatest challenges to the PORTS area during remediation. Construction and operation of the OSDC will present more worker and local community risks and

impacts to human health and the environment than off-Site disposal, which does not involve extensive new construction. There will be significant truck traffic when transporting construction and fill material to and from PORTS. Off-Site disposal would generate few local impacts and only minor, incremental impacts at the receiving disposal facility. Off-Site disposal would result in additional risks of traffic accidents as a result of long-distance transportation.

Under all the alternatives evaluated, risks to workers and the community from actions at the remediation locations and disposal facilities would be controlled through compliance with regulatory requirements and health and safety plans. Excavating fill borrow locations that contain landfills will increase the need for additional planning and oversight to control potential risks to workers. A sound anomaly detection program will be needed to ensure against OSDC disposal of landfill material that does not meet the WAC. Most of the safety risks for either action alternative are comparable to the risks from industrial operations that involve working around heavy equipment.

Short-term environmental impacts would be least for the no-action alternative, minimal for the off-Site disposal alternative, and greatest for the on-Site disposal alternative. Environmental impacts during implementation of the off-Site disposal alternative could result from a spill during transport and handling. However, the risk of a spill is low and only minor adverse impacts would result. Vehicles along the transportation corridor would cause an inconsequential increase in pollution and noise levels. The greenhouse gas emissions would increase for both alternatives, but they would be a small percentage of the current PORTS greenhouse gas emissions. The additional environmental impacts at the receiving off-Site disposal facilities would be negligible, over and above those caused by current and continuing operation of the facilities.

Construction and operation of the OSDC will cause local, short-term environmental impacts typically associated with a large construction project. The health of off-Site human receptors will not be impacted by construction and operations because these receptors are off the Site, over 1,000 ft away; however, noise and lights from the area may be heard and seen at nearby residences. Limitations on noise and light-generating activities will be put in place to minimize their effects and impacts at off-PORTS locations.

Disturbance of terrestrial resources will be expected with a change in on-Site land use, resulting in temporary losses of habitat; destruction of small, limited-range animals; and displacement of wildlife adjacent to construction areas. Direct impacts on wetlands and streams will occur, but they will be small. It is estimated that 0.348 acre of wetlands and 14,335 linear ft of streams will be directly impacted by construction and operation of the OSDC and support facilities. These impacts will be mitigated in accordance with associated ARARs. To mitigate impacts to these resources, 0.626 acre of wetlands and 14,335 linear ft of streams will be restored, enhanced, or preserved elsewhere on PORTS at a ratio of 1.5 to 1 for nonforested impacted wetlands and a ratio of 2 to 1 for forested impacted wetlands. To mitigate impacts to streams, a little over a 1 to 1 ratio was calculated using the estimated impacts developed during studies to support the RI/FS. Should the actual stream impacts vary from that original estimate, the stream mitigation ratio will be recalculated using Ohio EPA's stream mitigation protocol. The potential for releases to the environment during excavation of contaminated fill sources will need to be assessed and controlled. Additional assessments of impacts on protected resources, if present, will be performed, and mitigation measures will be identified and implemented in consultation with the appropriate state and federal agencies.

The duration of disposal activities under the on-Site and off-Site disposal alternatives would be based on potential funding and the logistics of moving D&D waste (RC-1). It is assumed to take 10 to 12 years to



complete Alternative 2, while off-Site disposal of the same volume of waste is assumed to take 18 to 20 years, based on the funding profile available in early FY 2012. A decrease in available funding would comparably delay the operations under both alternatives. The major impact from lower funding would be an increase in costs; however, the increase would occur for both alternatives as discussed in the Cost section.

For all alternatives, the most significant risks to the public would result from DFF&O waste (RC-1) transportation. Potential risks result from exposure to gamma radiation during normal (accident-free) transportation, exposure to radionuclides during accidents, and physical trauma associated with accidents (regardless of the waste being carried). The risk from exposure to radiation during transportation would be extremely low for both on-Site and off-Site disposal and is not a discriminating factor between the alternatives. However, because of the increased transportation miles, the risk from an accident would be inherently greater for Alternative 3. The additional risk of injury or fatality for the off-Site disposal alternative (over two times the number of potential injuries and a nearly five times higher number of potential fatalities than for Alternative 2) is the result of added transportation miles. Although the accident rate for rail transport is much less than the rate for trucks, rail accidents are more serious with more fatalities per accident. The estimated fatalities are 0.55 for Alternative 2 and 2.4 for Alternative 3.

#### **10.1.6 Implementability**

This criterion examines the technical and administrative factors that affect implementation of an alternative. Administrative feasibility addresses the need for coordination with other offices and agencies, including the ability to obtain permits and regulatory agency authorizations/approvals, as applicable. Technical feasibility considers difficulties and uncertainties associated with construction and operation of a given technology, the reliability of the technology, the ease of undertaking additional future remedial actions, the ability to monitor effectiveness of remedial action, and the potential risk of exposure from an undetected release.

All of the considered alternatives are implementable. All are administratively and technically feasible, although the on-Site component presents greater technical challenges. Services and materials for either action alternative are readily available, although the continued availability of the off-Site disposal capacity is uncertain.

All alternatives are administratively feasible. For those wastes (RC-1) exceeding the OSDC's WAC, the administrative feasibility of off-Site shipment and disposal has been demonstrated by successful past shipments of waste from PORTS.

The off-Site disposal alternative is also administratively implementable. Agreements with state agencies for interstate shipment of waste, and with the States of Utah and Nevada for waste disposal, have been made in the past, and future agreements may be obtainable. A DOE exemption from the requirement to dispose of LLW at the generation area or at another DOE facility could also be readily obtained.

The technical components of the on-Site disposal alternative will be straightforward to implement using existing and readily available technologies. Off-Site disposal would also be straightforward to implement. The main difference between the on-Site and off-Site disposal alternatives is the requirement for construction of the OSDC versus the long-distance transport requirements for off-Site disposal. Both are readily implementable, but construction of the OSDC is more complex.

Services and materials needed for construction and operation of the OSDC, or for shipment and dispositioning of waste under the off-Site alternative, are readily available. Disposal capacity is available

for D&D waste (RC-1) that would not meet on-Site facility WAC (under the on-Site disposal alternative) and would require off-Site disposal. Disposal capacity is currently available at the representative off-Site disposal facilities. The continued availability of current commercial facilities for the duration of waste creation is likely. While several facilities would be available for the small volume of RCRA/TSCA hazardous waste in the anticipated waste streams, EnergySolutions and NNSS are the only facilities currently available that can accept mixed waste for disposal. Some other facilities could accept LLW, but no contracts are in place between these facilities and DOE-PORTS. New commercial mixed waste disposal facilities may be developed.

Because of state equity issues, it is possible that public concerns regarding shipments outside of Ohio could affect the availability of off-Site disposal facilities. There is a recent example of a state barring waste from entering its borders for disposal. These concerns could be addressed through appropriate channels such as the National Governors Association and could affect off-Site transport or disposal of waste. The on-Site disposal alternative provides a greater level of certainty that long-term disposal capacity will be available.

#### **10.1.7 Cost**

Cost estimates developed to support the detailed analysis are based on FS-level scoping and are intended to aid in comparisons between alternatives. EPA guidance states that these estimates should have an accuracy of +50 to -30 percent (EPA 1988). The cost estimates are based on the scopes of work and assumptions provided in the detailed alternative descriptions in the RI/FS report. The present worth cost of on-Site disposal is estimated to be \$882 million, and the present worth cost of off-Site disposal is estimated to be \$1.1 billion. Annual S&M costs are associated with Alternative 2. Because DOE would incur these costs, they have been estimated. There are long-term S&M costs that would exist for the off-Site disposal alternative, but they are already factored into the disposal fee and, as such, cannot be estimated as S&M costs.

If the schedule was doubled, and even tripled, Alternative 2 would remain less expensive than Alternative 3, both with respect to capital costs and to present worth costs. A decision based on cost would remain the same. However, because there are set costs associated with operating a OSDC regardless of the quantity of waste received, the less waste that is received in a unit time, the more expensive per cubic yard on-Site disposal would become. Comparable routine costs are insignificant in Alternative 3. If the schedule was increased by four to five times the current assumption, Alternative 3 would become less expensive than Alternative 2.

There are no costs for Alternative 1, no action.

#### **10.1.8 State Acceptance**

Ohio EPA concurred with the selected remedy as it was presented in the Proposed Plan.

#### **10.1.9 Community Acceptance**

DOE held a public review and comment period from November 12, 2014 to March 11, 2015, and hosted a public meeting on November 17, 2014 regarding the Waste Disposition Proposed Plan. In addition to the verbal comments received in the November 17 public meeting, comments were received by mail, fax, and via email during the comment period. In total, 507 comments were received on the Waste Disposition Proposed Plan. Commenting parties included local residents, federal, state, and local elected officials, representatives from the site workforce, and other interested parties. Of the total number of comments received, 454 were supportive of the preferred alternative. Of the remaining comments, those that were opposed to on-Site disposal expressed a preference for Alternative 3 (off-Site disposal), regardless of cost

and implementability considerations. While expressing reservations about on-Site disposal, the comments received did not identify any technical errors in the development of the alternatives or the technical basis for the selection of the preferred alternative. Responses to community comments are found in Part 3 of this ROD, the Responsiveness Summary.

## **10.2 OTHER CRITERIA EVALUATION**

### **10.2.1 Irreversible and Irretrievable Commitment of Resources**

A commitment of resources is irreversible when the impact of the action limits the future options for that resource. An irreversible effect is one where the resource cannot be replaced in a reasonable time frame. An evaluation focusing on the use of fuels, construction materials, land, sensitive resources, and other utilities is typically conducted.

Both action alternatives use some resources that would be irreversible and irretrievable. Most notably will be the irreversible commitment of 100 acres of land for the OSDC under Alternative 2. The 100 acres will be permanently committed as a waste disposal location with no alternate use in the future. In addition to the 100 acres, another 220 acres of land and ecological habitats will be committed to supporting construction, operation, and closure of the OSDC for several decades. Although this land will be released for future use once the OSDC is closed, the existing habitat will be lost for a long period of time after the OSDC is closed. Successional forest habitat such as that present in the OSDC area can take decades to recover.

Nearly 2.5 million cy of geologic resources will be used in construction of the OSDC in Alternative 2, and up to 2.3 million cy of soil may be used in the operation of a cell to provide an appropriate EC-1/EC-2 ratio. Alternative 2 will require over 5 million gal of fuel for the trucks bringing construction materials on Site and removing some of the waste to off-Site disposal locations. Alternative 3 would require over 8 million gal of diesel fuel to transport the waste off Site.

### **10.2.2 National Environmental Policy Act of 1969 Values**

National Environmental Policy Act of 1969 (NEPA) values, such as impacts on surface water, air, groundwater, etc. are discussed under the CERCLA criteria because they are values of both programs. There are additional, unique NEPA values that have been evaluated in the RI/FS, such as environmental justice and socioeconomic impacts, in accordance with the DOE Secretarial Policy on NEPA (DOE 1994). The cumulative impacts of these alternatives with other activities at or near PORTS are also evaluated.

There is the potential for some long-term socioeconomic impacts from the presence of the OSDC at PORTS. The 320 acres of land dedicated to the OSDC and support facilities will only be available for that use in the short term, with 100 acres not available for any other use but waste disposal in the long term. Removal of all D&D waste (RC-1) from PORTS would not result in any negative long-term socioeconomic impacts in the area.

The socioeconomic impacts in the short-term center around the jobs created by each alternative. Alternative 2 produces more jobs locally but for a shorter period of time (12 years). Based on the cost estimate, Alternative 3 produces fewer jobs locally but for a longer period of time (20 years). Local jobs have a positive impact on the surrounding economy. However, the remediation jobs, regardless of which alternative is selected, would not notably increase total PORTS jobs over current levels.

Neither alternative has significant cumulative impacts to environmental resources when considered with past operations at PORTS as well as new construction in the area. The OSDC will be designed not to

release contaminants to the environment at unacceptable levels, so there should be no contribution to on-Site contamination. The increased traffic on nearby roads, resulting from either alternative, is not thought to conflict with increased construction traffic at nearby industrial parks because of the existing light traffic on the roads and the small construction efforts at other locations. However, there may be some impacts to driver safety, especially during peak daily traffic hours.

The actions in Alternative 2 do not have significant, nearby off-PORTS effects. The community immediately surrounding PORTS is comparable in characteristics to the other communities in Southern Ohio with similar minority populations and comparable household incomes as other counties in the area. There will only be a slight increase in truck traffic associated with bringing material on PORTS to construct the OSDC as well as taking some of the D&D waste (RC-1) off Site for dispositioning.

Therefore, there are no disproportionately high and adverse human health or environmental effects from the actions in Alternative 2 on minority and low-income populations. Even though the truck traffic would increase with Alternative 3, most of the D&D waste (RC-1) would be shipped by rail. Therefore, there are limited, nearby off-Site effects from Alternative 3. The risk from transportation accidents is elevated because of the miles involved in shipping waste, but much of that impact is not local. Therefore, there are no disproportionately high and adverse human health or environmental effects on minority and low-income populations from the actions in Alternative 3.

### 10.3 SUMMARY OF COMPARATIVE ANALYSIS

Table 4 summarizes the CERCLA nine criteria analysis for the alternatives. For most of the evaluation criteria, the differences between on-Site and off-Site disposal are minor. Three key criteria differentiate between the on-Site and off-Site alternatives: (1) short-term transportation risk, (2) duration, and (3) cost.

The statistically based number of injuries from an accident is 8.8 for Alternative 2, while the same risk is 18.7 for Alternative 3 (off-Site disposal). The statistically based number of fatalities would be 0.55 for Alternative 2 and 2.4 for Alternative 3.

**Table 4. Comparative Analysis Summary**

Evaluation Criteria	No-action Alternative	On-Site Disposal Alternative	Off-Site Disposal Alternative
Overall protection of human health and the environment	Not considered protective. Degrading buildings would release contaminants at levels of concern.	Considered protective. Greater protection in the short term because of decreased transportation risks. Equally protective as off-Site alternative for at least 1,000 years.	Considered protective. Equally protective as on-Site alternative for at least 1,000 years. Off Site could be more protective sometime after 1,000 years because of less rainfall.
Compliance with ARARs/TBCs	No ARARs (per EPA OSWER Directive 9234.2-01/FS-4, there are no ARARs for a no-action alternative.)	Meets all ARARs except for OAC 3745-27(H)(4)(d): need waiver based on greater risk to human health and the environment.	Meets all ARARs/TBCs.
Long-term effectiveness and permanence	Not effective at protecting human health or the environment.	Effective for 1,000 years. Long-term use of land-use restrictions and loss of ecological habitat at disposal cell.	Effective for long term. Land use at disposal facilities already committed. Waste volume represents small percentages of facility capacity.

**Table 4. Comparative Analysis Summary (Continued)**

<b>Evaluation Criteria</b>	<b>No-action Alternative</b>	<b>On-Site Disposal Alternative</b>	<b>Off-Site Disposal Alternative</b>
Reduction of toxicity, mobility, or volume through treatment.	No reduction of toxicity, mobility, or volume.	Disposal facility will not provide any reduction of toxicity, mobility, or volume. Minor reductions through centralized size reduction or decontamination operations. More significant treatment may be needed if contaminated fill is used (RC-2, RC-3).	Disposal facility would not provide any reduction of toxicity, mobility, or volume except where treatment is used at off-Site disposal location to meet WAC.
Short-term effectiveness	No action means no short-term impacts, so effective in the short-term.	Some transportation risks from import of construction materials and transport of waste off Site. Some adverse environmental impacts at the OSDC from construction and operations, including fill excavation, but will be controlled by appropriate engineering and construction practices.	Transportation risks would increase significantly for the off-Site alternative over on-Site disposal. Only minor, incremental environmental impacts would occur at the existing off-Site facilities.
Implementability	No implementation required.	Administrative requirements are considered achievable. Construction, fill excavation, and operations are readily implementable. Services and materials are available. A significant construction effort is needed.	Administrative and technical requirements are implementable. Disposal relies on commercial facilities; continued availability is likely but uncertain. State issues may interfere with future availability.
<b>Cost</b>	No costs.	<b>Present worth cost is \$882 million.</b>	<b>Present worth cost is \$1.1 billion.</b>
ARAR = applicable or relevant and appropriate requirement EPA = U.S. Environmental Protection Agency OAC = <i>Ohio Administrative Code</i> OSDC = on-site disposal cell		OSWER = Office of Solid Waste and Emergency Response TBC = to-be-considered WAC = waste acceptance criteria	

Alternative 3 could take almost two times as long to implement as Alternative 2. The logistics of moving the large quantity of waste across the country via railroad and truck is more challenging than moving that amount of waste across PORTS.

The present worth costs for the on-Site and off-Site disposal alternatives are \$0.882 billion and \$1.1 billion, respectively.

## 11. PRINCIPAL THREAT WASTES

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes an expectation that lead agencies will use treatment to address the principal threats posed by contamination wherever practicable (NCP §300.430[a][1][iii][A]). The principal threat concept is applied to the characterization of source materials. Principal threat wastes are those source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained or would present a significant risk to human

health or the environment should exposure occur. EPA's *A Guide to Principal Threat and Low Level Threat Wastes* (EPA 1991) states that "Wastes that generally will be considered to constitute principal threats include, but are not limited to, the following:

- **Liquid source material** – waste contained in drums, lagoons or tanks, free product in the subsurface (i.e., [nonaqueous phase liquids] NAPLs) containing contaminants of concern (generally excluding ground water).
- **Mobile source material** – surface soil or subsurface soil containing high concentrations of chemicals of concern that are (or potentially are) mobile due to wind entrainment, volatilization (e.g., [volatile organic compounds] VOCs), surface runoff, or subsurface transport.
- **Highly-toxic source material** – buried drummed non-liquid wastes, buried tanks containing non-liquid wastes, or soils containing significant concentrations of highly toxic materials."

Because the waste disposition decision made in this ROD is not determining a need to remediate mobile source material, liquid or drummed buried waste, or highly toxic soils, the concept of principal threat wastes does not apply to this decision. Decisions generating waste, such as the Process Buildings ROD, will address the potential for principal threat waste.

## 12. SELECTED REMEDY

This section discusses the rationale for the selected remedy, provides more details about the selected remedy, summarizes the estimated costs for the remedy, and, finally, discusses the expected outcome of implementing the remedy.

### 12.1 SUMMARY OF THE RATIONALE FOR THE SELECTED REMEDY

Based on all considerations, Alternative 2 is the selected alternative for dispositioning waste at PORTS. Based on information currently available, DOE has determined the selected alternative meets the threshold criteria and provides the best balance of tradeoffs with respect to balancing and modifying criteria. DOE has determined that the selected alternative satisfies the statutory requirements of CERCLA §121(b) to: (1) be protective of human health and the environment, (2) comply with ARARs or provide justification for a waiver, (3) be cost-effective, and (4) use permanent solutions and resource recovery technologies to the maximum extent practicable. The fifth CERCLA §121(b) criterion is to satisfy the preference for treatment as a principal element of the remedy. Treatment opportunities are limited under this alternative because most of the D&D waste (RC-1) has low levels of contamination but high volumes and because treatment is considered typically under the generating decision document. CERCLA guidance acknowledges that treating these types of waste streams may not be cost-effective. Under this remedy, waste treatment may be used in three cases:

- Centralized treatment such as size reduction and decontamination by physical or chemical (washing) processes to allow waste to meet an on-Site or off-Site WAC or recycling and/or reuse requirements. The location of a centralized treatment system can be anywhere on Site, including near the OSDC.
- Treatment of any DFF&O waste that may be conducted at an off-Site disposal facility prior to disposal. DOE will obtain the necessary approvals/authorizations, as applicable, and will meet all applicable requirements, including meeting the WAC, for the on-Site disposal of any DFF&O waste which is treated off-Site and returned to DOE for disposal in the OSDC/CAMU.



- Treatment of secondary wastes (those generated from OSDC operations), including wastewater and/or leachate, residual soil, and non-DFF&O contaminated fill with additional regulatory authorization/approval, as applicable (in compliance with ARARs and/or other regulatory requirements to meet the OSDC WAC).

## 12.2 DESCRIPTION OF THE SELECTED REMEDY

Alternative 2 includes the dispositioning of D&D waste (RC-1) in a newly constructed, engineered waste disposal facility (the OSDC) at PORTS. Anticipated wastes types will include construction and demolition debris, solid waste, LLW, RCRA waste, TSCA waste, and mixed wastes consisting of combinations of these waste types that meet the OSDC's WAC. Wastes not meeting the OSDC WAC will be transported to off-Site disposal facilities or be treated on Site to attain the WAC for the on-Site or off-Site disposal facility. Additionally, under Alternative 2, some D&D material will be recycled and/or reused. Liquid wastes, transuranic (TRU) wastes, high-level radiological waste, and spent nuclear fuel are not considered to be waste streams for disposal in the OSDC. (TRU waste is waste which has been contaminated with alpha-emitting transuranic radionuclides possessing half-lives greater than 20 years and in concentrations greater than 100 nCi/g. If the concentrations or the half-lives are below the limits, it is possible for waste to have transuranic elements but not be classified as TRU waste. Waste with transuranic constituents can be placed in the OSDC if not defined as TRU waste, as long as all other WAC components are met.)

The design capacity of the OSDC is based on the D&D waste (RC-1) volumes anticipated and the amount of fill that is needed to successfully dispose of waste while minimizing future subsidence potential as well as consideration of the disposal needs of non-DFF&O waste (RC-2) from the cleanup of soils and groundwater that may be generated at PORTS. Such potential waste streams are associated with environmental media cleanup activities to be conducted under the Ohio Consent Decree and for which DOE might seek exemptions under Ohio laws and regulations to allow placement of such waste stream in the OSDC. Original estimates of D&D waste (RC-1) volumes projected over 1.1 million cy of waste being disposed on Site. Another 107,000 cy were estimated to be disposed off Site and another 110,000 cy of material projected to be recycled and/or reused. All of these volumes are estimates and actual volumes of waste disposed in the OSDC may differ from the estimated volumes. The original capacity estimated for the OSDC was 3.9 million cy in the RI/FS, but the selected remedy consists of the OSDC with a capacity of 5 million cy to factor in uncertainties in the underlying assumptions of the original capacity calculations. The land area impacted is the same for either volume. All WAC calculations were performed assuming a cell capacity of 5 million cy.

Three elements of disposal facility design are critical to ensuring adequate, long-term protection of human health and the environment: (1) design of the cell's waste containment features, (2) location of the cell, and (3) characteristics of the waste placed in the disposal cell (as set by the WAC). The major components of Alternative 2 are the following:

- OSDC containment feature design
- Site location selection
- Support facilities
- Predesign studies
- Site preparation and OSDC construction

- WAC
- OSDC operations (staging, waste disposal, and wastewater collection and treatment)
- Fill operations
- Treatment (as necessary for fill or as a centralized operation to support disposal and/or recycling/reuse)
- OSDC capping and support facility dismantlement
- Postoperations S&M, including monitoring
- Off-Site disposal and treatment (post-ROD remedial design/remedial action [RD/RA] work plans or other documents, as appropriate, will describe the need for any treatment necessary to meet applicable off-Site WAC for waste requiring off-Site disposal)
- Recycling and/or reuse.

Per the requirements of Table 1C of the DFF&O, an RD/RA work plan that addresses all aspects of the project and identifies subsequent documentation for phases of the project will be submitted for Ohio EPA review within 180 days of DOE receiving Ohio EPA concurrence/approval, as applicable, on the ROD, unless an alternate schedule is otherwise mutually agreed to in writing by the parties. However, should it become more appropriate, DOE may also consider submitting multiple RD/RA work plans, with the first one submitted within 180 days of DOE receiving Ohio EPA concurrence/approval, as applicable, on the ROD for those phases of work for which DOE is prepared to proceed. In the second case, where DOE will be submitting multiple RD/RA work plans, DOE will request an alternate schedule for submission of the RD/RA work plans. DOE proposes to submit RD/RA work plans for remaining phases of work within 90 days of DOE notifying Ohio EPA in writing that DOE is prepared to proceed with an activity; the aforementioned 90-day period for submitting any such RD/RA work plan will be a Milestone. Additionally, DOE will identify the RD/RA work plans projected to be submitted within the FY, the FY+1, and the FY+2 in the annual submittal required pursuant to Paragraph 20.b of the DFF&O. The various actions will be initiated for each phase of work by the dates established in the applicable RD/RA work plans.

#### **The OSDC containment feature design**

The OSDC will consist of an engineered disposal cell that meets the requirements of ARARs/TBCs in Appendix A, including requirements related to dispositioning of solid waste, RCRA hazardous wastes, TSCA wastes, and LLW. The OSDC design will include sufficient capacity to accept 5 million cy. The design basis for the OSDC is to achieve the following:

- Effective protection of human health and the environment through waste isolation for 1,000 years
- Protection against animal and plant intrusion and minimization of the potential for human intrusion
- Reduction of potential for incremental settlement, total settlement, and slope failure under static and seismic conditions through proper design and waste placement techniques.



The OSDC design is the result of an iterative process involving development and review of the cell design in conjunction with evaluation of the anticipated waste streams and facility WAC development, which result in a facility that meets the performance objectives established in ARARs and TBCs.

The major components of the cell's containment features include the multilayer base liner, the final cover system, leachate collection and treatment system, and support facilities.

### **Site Location Selection**

One of the primary criteria identified in the DFF&O for consideration of on-Site disposal is that it must be protective of human health and the environment. A properly designed OSDC is protective of human health and the environment because of the design of the impermeable cap and liner systems. Location selection can enhance the level of protectiveness for an OSDC. Sixteen study areas were initially evaluated in the RI/FS as potential locations for the OSDC and then narrowed down to four study areas for a more detailed evaluation. This detailed evaluation included an in-depth review of the various hydrogeologic conditions within the compliance time frame of 1,000 years or longer.

Based on the analysis conducted in the RI/FS, Study Areas C and D are more protective of human health and the environment than Study Areas A and B. Therefore, Study Areas A and B were eliminated from further consideration in the RI/FS. The underlying hydrogeologic conditions of Study Areas C and D consist of impermeable bedrock, which favors much longer travel times for contaminants if released from a disposal cell.

A key difference between the two locations remaining after the RI/FS is the areal extent of the competent bedrock for the OSDC. This areal extent at Study Area C is limited. An OSDC at Study Area D has a larger waste storage capacity than an OSDC at Study Area C. Based on the location and geological subsurface, it was estimated that the 5 million-cy capacity is available at Study Area D. Therefore, Study Area D is selected as the location for the OSDC.

### **Support Facilities**

A support area and an exclusion area will be established within the fenced control area to provide an office area, employee facilities, parking, and security.

A waste staging area, called the IMTA, will serve as a temporary storage area for incoming waste. This area will be used to optimize waste placement in the OSDC. The IMTA will be graded so contact water will flow by gravity to a sump pump system and to the interim leachate treatment system. Ohio EPA's concurrence/approval, as applicable, with this ROD will designate the IMTA as a treatment and storage CAMU.

Waste transportation will likely begin using rail. There are railroads throughout PORTS that can be used to transport waste. To support rail shipments, loading and unloading facilities may be installed or improved both at the waste generation site and at the OSDC support facilities. Haul roads and other conveyance systems will be constructed to support waste transportation.

Water, electricity, telephone lines, sanitary waste facilities (septic system or collection tanks), and any other necessary utilities will be established at the OSDC area. Fences and gates will be installed to control access to portions of the area. Additional security measures will be used, as appropriate, to control access to classified material.

Existing and new groundwater monitoring wells will be used to monitor the quality of the underlying groundwater and potential pathways of leaks, where possible. Air monitoring equipment will be available for use during construction and operations.

### **Predesign studies**

Predesign studies are planned to provide data necessary to support the basis of design for the OSDC at PORTS. These data are anticipated to be generated from a series of field and laboratory studies focused on the following: (1) physical and chemical characteristics of projected wastes; (2) natural and man-made materials used for facility construction; (3) compatibility of leachate with the man-made materials; (4) subgrade conditions of a location for the OSDC; (5) clay liner construction approach; and (6) waste placement and compaction approach. Physical and chemical characteristics of projected wastes and the subgrade conditions studies were conducted during implementation of the RI/FS work and the results were reported in the RI/FS. A remedial design site investigation on the PGE will be conducted to collect information to demonstrate WAC compliance. This, as well as additional studies, if needed, will be implemented under sampling and analysis plans submitted to Ohio EPA for review.

### **Site preparation and OSDC construction**

Construction activities for the OSDC include site development, disposal cell base liner construction, construction of support facilities, and capping.

Site development actions will be performed to minimize environmental impacts, as required in the ARARs for site preparation included in Appendix A. Site clearing and grubbing will remove trees and other vegetation to provide sufficient open area for construction. To the extent practical, most clearing will occur during autumn or winter to protect the nests of migratory birds and bats during breeding season. The northern long-eared bat has been identified at the disposal location and is a federally-threatened species. Limitations on the timing of clearing will also protect against potential impacts to the northern long-eared bat.

The material removed from the area may be placed in the X-611B Sludge Lagoon to fill in the lagoon. It may also be stockpiled for other use such as for liner and cover construction, if needed. Appropriate construction practices will be used in all excavation and construction areas, including at any borrow areas, to control surface water runoff and minimize erosion and transport of sediment from exposed areas. Sediment detention basins could be used to protect against transport of sediment away from the area.

### **Waste acceptance criteria**

The WAC consist of seven components, which are outlined in the DFF&O: (1) prohibited items resulting from ARARs or DOE decisions or agreements; (2) activity criteria and chemical concentration criteria (radiological levels and other contaminant levels); (3) waste evaluation and characterization standards (methods used in the field to verify waste can go into the OSDC); (4) waste physical characteristics standards (size and shape of items); (5) waste packaging standards; (6) waste safe handling standards; and (7) waste transportation standards. Several of the components (3 through 7) of the final WAC will require refinements after the final design is completed. Such refinements for these WAC components will be reviewed and approved by Ohio EPA in future OSDC-related regulatory documents as required by the DFF&O. The future OSDC regulatory documents would establish Ohio EPA-approved operational controls and field oversight for the OSDC, including measures to control dust emissions and leachate collection, treatment, and monitoring.

Waste must satisfy every component of the WAC before it is allowed to be disposed in the OSDC. The first component of the WAC is a series of prohibitions that forbid waste from being disposed in the OSDC unless associated requirements are met. WAC Component 1 is divided into two parts:

- WAC Component 1A: Formal regulatory prohibitions that result from ARARs
- WAC Component 1B: DOE-elected prohibitions that result from DOE operational decisions to make the disposal facility even more protective or easier to operate.

Included in the operational prohibitions is the requirement that only waste generated at the PORTS be considered for disposal at the OSDC. The list of operational prohibitions is presented in Table 5, under WAC Component 1B.

**Table 5. WAC for the OSDC**

Prohibitions (Component 1A)	
Prohibition/Exclusions	Rationale
A prohibition on the acceptance of CAMU-ineligible RCRA hazardous waste that does not meet LDR treatment standards.	40 <i>CFR</i> 268.40(a) <i>OAC</i> 3745-270-40(A)
A prohibition on the acceptance of CAMU-ineligible RCRA hazardous debris and/or soil that does not meet Alternate Treatment Standards.	40 <i>CFR</i> 268.45(a) (for hazardous debris) 40 <i>CFR</i> 268.49(a) (for hazardous soil) <i>OAC</i> 3745-270-45(A) (for hazardous debris) <i>OAC</i> 3745-270-49(A) (for hazardous soil)
A prohibition on CAMU-eligible waste that does not meet the adjusted treatment standard (5,000 ppm) for the Principal Hazardous Constituent of TCE.	40 <i>CFR</i> 264.552(e)(4) <i>OAC</i> 3745-57-72(E)(4)
A prohibition on the acceptance of ignitable and reactive waste per RCRA.	40 <i>CFR</i> 264.312(b) <i>OAC</i> 3745-57-12(B)
A prohibition on the acceptance of TRU waste or HLW.	DOE Order 435.1 design constraints.
A prohibition on the acceptance of refrigeration equipment with remaining refrigerant per Ozone Standards.	40 <i>CFR</i> 82.154(b)
A prohibition on the placement of acid batteries.	40 <i>CFR</i> 273.31 <i>OAC</i> 3745-273-31
A prohibition on the placement of bulk used oils in liquid form.	40 <i>CFR</i> 279.81 <i>OAC</i> 3745-279-81
Prohibition on the disposal of PCB-contaminated electrical equipment (except capacitors) containing free-flowing liquids.	40 <i>CFR</i> 761.60(b)(4)
Prohibition on the disposal of PCB-contaminated articles containing free flowing liquids.	40 <i>CFR</i> 761.60(b)(6)(ii)
Prohibition on the disposal of PCB liquids drained from electrical equipment.	Must be disposed in an incinerator or high-efficiency boiler depending on concentration.
Waste must not be pyrophoric. Pyrophoric materials contained in waste shall be treated, prepared, and packaged to be nonflammable.	<i>OAC</i> 3701:1-54-10(B)(6)
Waste must not be readily capable of detonation or of explosive decomposition or reaction at normal pressures and temperatures, or of explosive reaction with water.	<i>OAC</i> 3701:1-54-10(B)(4)
Waste must not contain or be capable of generating quantities of toxic gases, vapors, or fumes harmful to persons transporting, handling, or disposing of the waste.	<i>OAC</i> 3701:1-54-10(B)(5)
Prohibition on the acceptance of RCRA hazardous waste containing bulk or noncontainerized liquid hazardous waste or hazardous waste containing free liquids (whether or not sorbents have been added).	40 <i>CFR</i> 264.314(a) <i>OAC</i> 3745-27-19(E)(8)(b) and (h)(i) <i>OAC</i> 3745-57-14(A)(E)

**Table 5. WAC for the OSDC (Continued)**

<b>Prohibitions (Component 1A) (continued)</b>	
<b>Prohibition/Exclusions</b>	<b>Rationale</b>
Prohibition on the placement of bulk or noncontainerized liquid hazardous waste or free liquids contained in hazardous waste (whether or not sorbents have been added) in any CAMU except where placement of such wastes facilitates the remedy selected for the waste. (This prohibition applies to CAMU eligible waste.)	40 <i>CFR</i> 264.552(a)(3) <i>OAC</i> 3745-57-72(A)(3)
<b>Prohibited Waste Streams by Agreement (Component 1B)</b>	
<b>Waste Stream</b>	<b>Description</b>
Off-PORTS generated waste.	A prohibition on the acceptance of waste from off-PORTS generating sources (excluding lab returns and treatability testing wastes and material currently stored on the Facility).
Compressors, Converters, and Coolers from X-326.	Components in-place within the X-326 Process Building as of April 15, 2010, the initial date of the DFF&O.
Enriched materials.	Containerized nuclear material inventories of uranium compounds exhibiting enrichments greater than 20 percent (excludes items such as miscellaneous parts, pipes, valves, empty containers etc., with only residual contamination which were packaged for ease of handling and safety reasons).
<b>Activity and Chemical Concentration Criteria (Component 2)</b>	
<b>Waste Stream</b>	<b>Requirement</b>
Hazardous waste-CAMU ineligible.	Treatment standards, arranged by hazardous waste code, are located in the "Treatment Standards for Hazardous Waste" table in <i>OAC</i> rule 3745-270-40.
Hazardous waste contaminated debris	Alternate treatment standards are located in <i>OAC</i> rule 3745-270-45.
Hazardous waste contaminated soil	Alternate treatment standards are located in <i>OAC</i> rule 3745-270-49.
CAMU-eligible hazardous waste.	TCE – 5,000 ppm.
<b>Documents That Become Part of WAC Upon Approval (Components 3 through 7)</b>	
<b>Document<sup>a</sup></b>	<b>WAC Components Included (para. 5.mm)</b>
WAC Implementation Plan.	Prohibitions Activity Criteria and Chemical Concentration Criteria Waste Evaluation and Characterization Standards Waste Safe Handling Standards.
OSDC Operations Plan.	Waste Physical Characteristics Standards Waste Packaging Standards Waste Transportation Standards.

<sup>a</sup>The noted documents will become part of the enforceable WAC upon Ohio EPA review and concurrence/approval, as applicable.

CAMU = Corrective Action Management Unit  
*CFR* = Code of Federal Regulations  
 DFF&O = The April 13, 2010 Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action, including the July 16, 2012 Modification thereto  
 DOE = U.S. Department of Energy  
 HLW = high-level waste  
 LDR = land disposal restrictions  
*OAC* = Ohio Administrative Code

Ohio EPA = Ohio Environmental Protection Agency  
 OSDC = on-Site disposal cell  
 PCB = polychlorinated biphenyl  
 PORTS = Portsmouth Gaseous Diffusion Plant  
 RCRA = Resource Conservation and Recovery Act of 1976, as amended  
 TCE = trichloroethene  
 TRU = transuranic  
 WAC = waste acceptance criteria

WAC Component 2 requires that the waste be evaluated against activity and chemical concentration criteria as required by DFF&O. Wastes that do not meet these criteria are not allowed to be disposed in the OSDC unless further treatment following prescribed requirements is performed.

Fate and transport modeling was conducted to determine the potential migration of constituents of concern from the OSDC. The results of this modeling are presented in detail in Appendix I of the Waste Disposition RI/FS. This modeling creates a tool to forecast the movement of the contaminant in the waste into the environment and to potential future human and ecological receptors. This model mathematically mimics the influences that both the site geology and the engineering properties of the disposal facility would have on the movement of these contaminants for 1,000 years into the future. The results of this modeling provide upper bound numerical limits for the maximum activity and chemical concentrations that may be present in hypothetical wastes to ensure the long-term protection of the public and the environment. The results indicate that the activity and chemical concentrations actually present in PORTS waste are at least five orders of magnitude lower than what the model demonstrates could be placed into the disposal facility and remain protective. This conclusion is the result of the favorable geology found at the OSDC location along with the robust engineering design features of the disposal facility.

Any waste stream that is designated as RCRA hazardous waste must meet the treatment standards associated with the ARARs summarized in Table 5, WAC Component 2. Ohio EPA's concurrence/approval, as applicable, with this ROD designates the OSDC as a treatment, storage, and disposal CAMU under *OAC 3745-57-72(E)(4)*. This designation allows the establishment of treatment standards for CAMU-eligible wastes associated with implementing cleanup at PORTS. The standards take into consideration the protectiveness level of the OSDC. These treatment standards replace those treatment standards designated in *OAC 3745-270-40, -45, and -49* for CAMU-eligible wastes. The designated treatment standards in *OAC 3745-270-40, -45, and -49* will continue to apply to all non-CAMU-eligible RCRA hazardous wastes that are generated during Site cleanup. Based on the evaluation conducted at PORTS, the only Principal Hazardous Constituent (PHC) identified at this time is TCE. An adjusted treatment standard of 5,000 ppm has been set. Additional PHCs may be identified in the future pending any further required characterization (e.g., of landfills).

The other five components of the WAC deal specifically with the engineering features of the OSDC and will be modified as further design and operations plans of the OSDC are developed. Table 5 includes the two design and operations documents that will be developed after the ROD is signed and, upon Ohio EPA review and concurrence/approval, as applicable, would become enforceable. These documents will detail out the remaining WAC components defined in the DFF&O and will be reviewed and, as appropriate, approved by Ohio EPA before implementation of the selected remedy.

The identification of PHCs is currently based on an extensive environmental database at PORTS collected over the last 25 years with Ohio EPA oversight. Although there are additional data planned to be collected from environmental media at PORTS, it is very unlikely that a contaminant would be identified that meets the PHC definition that has not already been identified. However, although unlikely, if data collection efforts should identify other constituents that could be of sufficient significance to meet the definition of a PHC, the following steps will be used to assess the potential presence of a new PHC.

Based on the large amount of existing soil data collected since the early 1990s for over 100 potential contaminants at PORTS, only TCE is currently identified as a PHC. The current plan is to remove all segregatable RCRA-hazardous wastes, regardless if CAMU-eligible or CAMU-ineligible, from the buildings before they are demolished, leaving only solid and LLW for the next phase of D&D. Should a decision on the disposal location change and DOE elect to send RCRA-hazardous waste from building D&D that was planned for off-Site disposal to the CAMU, an evaluation for (1) its CAMU-eligibility; and (2) for new PHCs associated with that waste will also be conducted.

The existing landfills inside Perimeter Road are one of the key potential sources of contaminated fill (RC-3). Additional characterization specified in future plans will be conducted to support the excavation of the landfills and to determine WAC compliance of the material excavated. The new data and other information collected will be evaluated to determine CAMU eligibility as well as if there are additional PHCs in the landfill waste.

The four steps that have been used and will be used in the future to identify PHCs in CAMU-eligible waste at PORTS are described below. The PHCs are those constituents that may require treatment prior to disposal in a CAMU.

- 1) First, a contaminant must be a hazardous constituent defined under *OAC* 3745-270 that would be subject to treatment standards for an as-generated waste. If a contaminant is not defined as a hazardous constituent, it is not a PHC.
- 2) Second, the maximum contaminant level present is compared to a risk-based screening level equating to a  $1 \times 10^{-3}$  ELCR through ingestion or inhalation (or a hazard quotient of 10 for non-carcinogenic compounds) for the potential future outdoor industrial user of PORTS in soil. The necessary values can be found in the most current PORTS Risk Methods Document that is available at the time of evaluation. (This document is updated semiannually.) If that PHC threshold value is not exceeded, the contaminant is not a PHC.
- 3) Third, if the maximum value does exceed the PHC threshold value, either a qualitative or quantitative risk evaluation is done to conclude if the contaminant will cause an ELCR of  $1 \times 10^{-3}$  or a hazard quotient of 10 across an investigative area.
- 4) And finally, when risks to human health and the environment posed by the potential migration of constituents in wastes to groundwater are substantially higher than cleanup levels or goals at the site, these constituents may be designated as PHCs. Current concentrations of groundwater are used in this analysis instead of modeled results because typically the contaminants in the primary waste have been in the environment a sufficient amount of time that migration to groundwater has occurred if it were going to occur. The major contaminant in groundwater at PORTS is TCE.

Should additional PHCs be identified in the future, appropriate treatment levels will be set and those levels will be added to the WAC through modification of the WAC Implementation Plan after concurrence/approval, as applicable, by Ohio EPA.

#### **OSDC operations**

Any waste destined for the OSDC will be adequately characterized, processed, inspected, and certified as meeting the OSDC WAC. In general, the operations phase will consist of bulk waste pickup at the generating locations by using trucks. The trucks will transport the waste to the OSDC along temporary haul roads. Large items and containers will be transported to the OSDC via flatbed trailer and offloaded, as appropriate. Waste transportation across the Site may begin using rail and rail shipments could continue throughout the project, where appropriate.

An IMTA that meets ARARs will provide temporary storage capacity to allow optimization of DFF&O waste placement. Shear attachments or cutting equipment may be provided at the IMTA to assist in size reducing waste to reach the disposal requirements. Depending on the need, a centralized decontamination operation may be implemented at the IMTA or another suitable location.

Dust will be controlled, and noise and air quality will be monitored in accordance with ARARs and environmental compliance plans. Groundwater and surface water monitoring will also occur (as described further below under Postoperations S&M).

### **Fill operations**

Sufficient fill will be needed to meet the placement requirements for the DFF&O waste requiring fill (RC-1, EC-2), as well as additional waste requiring fill (RC-3, EC-2) anticipated to be encountered during the generation of fill from contaminated borrow areas. Fill is used to minimize void spaces, which lessens the potential for future waste subsidence. Waste subsidence could impact the long-term effectiveness of the final cap, so subsidence of the waste is to be avoided. Fill will be obtained from on-PORTS and/or off-PORTS sources.

Select landfills (RC-3) and soil associated with contaminated groundwater areas (RC-2) are potential fill sources that could produce large quantities of fill. The use of non-DFF&O contaminated soil as fill (RC-2, RC-3) as opposed to clean fill potentially will benefit the government in several ways. The use of contaminated fill from areas of groundwater contamination may lower costs of remediating the groundwater and soils in the future, may expedite reaching Ohio Consent Decree cleanup levels, and could remove the need for long-term reliance on maintaining landfill caps, significantly lowering the long-term maintenance costs. It is assumed that the clean cap/overburden would be excavated and set aside to support postcleanup backfill requirements.

Should non-D&D contaminated soil under landfills (RC-2, RC-3) be used for fill at the OSDC, it should be noted that an estimated 223,000 cy of waste requiring fill (RC-3, EC-2) might be generated in the process of exhuming the landfills that overlie the contaminated soil. The presence of this waste (RC-3, EC-2) within these select existing landfills will create the need for additional fill to support OSDC placement. In general, it is assumed that the clean cap/overburden from the select existing landfills will be excavated and set aside to support postcleanup backfill requirements. Use of fill described in this ROD will be protective so long as the fill meets the WAC.

### **Treatment**

There are several types of treatment authorized under this ROD. There is the potential that some of the contaminated fill or associated waste requiring fill (RC-2, RC-3) that is excavated cannot be disposed in the OSDC without treatment. Additional regulatory authorization/approval, as applicable, will be required for excavation and treatment, as necessary, of non-DFF&O contaminated soil as fill in the OSDC. On-Site Treatment and/or off-Site treatment and disposal of this material, including dewatering, are included in this alternative, as appropriate.

Treatment of other OSDC secondary wastes, such as contact wastewater or leachate, will be conducted to meet ARARs or the WAC, as appropriate.

If a centralized treatment facility is deemed appropriate to support a Site-wide treatment or recycle and/or reuse initiative, such a facility will be a component of the selected remedy.

Finally, off-Site treatment at a disposal facility is part of the selected remedy as discussed with off-Site disposal.

### **OSDC capping and support facility dismantlement**

The final capping will occur shortly after portions of the OSDC are filled to capacity. Other final activities will include installation of the permanent leachate treatment systems (including both the active



system and a potential passive system), removal of the interim leachate treatment system and other support facilities no longer needed, and site restoration. Restoration could include removal of the sediment ponds, replacement of wetlands (if necessary), and grading and seeding of the disturbed areas outside the disposal cell to restore vegetation. Once support facilities are removed, the material from that removal will be disposed in the last cell before its cover is completed. The DFF&O requires submittal of a Draft Closure Plan, Completion of Remedial Action Report, and Closure Certification Report pursuant to the DFF&O subject to Ohio EPA review and concurrence/approval, as applicable.

### **Postoperations S&M**

During development of the support facilities, monitoring of the disposal facility and its environs will begin as soon as monitoring facilities are installed. Historic information and results from preoperation monitoring will be used to develop a baseline for comparison with postoperation monitoring results.

Surveillance and active maintenance, and long-term monitoring will occur after the OSDC is capped. The postoperations activities and associated reporting requirements will be conducted in accordance with approved, facility-specific S&M and monitoring plans and will meet all ARARs.

In accordance with ARARs and following the DFF&O, an Environmental Covenant for the OSDC will be put into place to prohibit residential and industrial use of the OSDC, construction of any facility that could damage the cover, or installation of groundwater extraction wells (for purposes other than monitoring). This Environmental Covenant for the OSDC will also identify other administrative controls necessary to protect the public and the integrity of the disposal cell and will be referenced in a future deed, which will be filed with the appropriate local governmental authority.

Long-term media monitoring (groundwater, surface water, and if needed, air) will be performed to detect potential releases from the disposal cell, both during operations and after closure. Groundwater wells located upgradient and downgradient of the disposal cell will be sampled to monitor indicator radiological and non-radiological contaminant concentrations and determine whether there have been contaminant releases from the disposal cell. Continued monitoring will support 5-year reviews under the DFF&O (40 *CFR* 300.430 [f][4][V]). The surface water downstream from the disposal cell will be monitored to determine whether contaminant levels have changed over time. Surface water monitoring will be conducted during operation of the facility and through postoperations care in support of 5-year DFF&O reviews. The list of monitoring constituents, sampling media, locations, frequency, and action levels will be defined in a monitoring plan, which will be one of the design deliverables for the OSDC. This plan will be reviewed and concurred with by Ohio EPA.

### **Off-Site disposal**

Alternative 2 includes off-Site disposal of some D&D waste (RC-1). For PORTS actions that transfer wastes off Site, permits are required at the receiving facility. Also, waste removed from the PORTS Facility must be disposed or treated at a disposal facility operating in compliance with the procedures for planning and implementing off-Site response actions, as outlined in 40 *CFR* 300.440 (EPA “off-site” policy). Treatment at the disposal facility may be needed prior to disposal.

In order to support rail shipments to a commercial facility, waste will need to be conveyed from the generator location to an on-Site rail siding. Improvements to a rail yard, if needed, are included in this decision.

Shipments to the disposal facilities will be by trucks or rail.



### Recycling and/or reuse

DOE is committed to the recycling and/or reuse of materials generated through D&D of the GDP facilities, in compliance with ARARs. Prior to implementing recycling, DOE will evaluate and document the benefits (including disposal volume savings) against the additional costs of completing the action, implementing issues, and efforts with implementing associated policy issues. There can be costs associated with segregating and handling material, demonstrating the potentially recycled material is uncontaminated, or in decontaminating the material. DOE will evaluate the individual materials and regulatory waste types throughout implementation of D&D and recycle and/or reuse materials at DOE discretion. The final decision to recycle and/or reuse specific materials or discrete waste streams would be at the discretion of DOE, so long as the recycle and/or reuse materials fits the definition of D&D, does not require modification of any Ohio EPA-approved or -concurred with Submissions (e.g., Proposed Plan, Decision Document, Remedial Design, etc.), and is in compliance with all ARARs. If DOE's recycling proposal requires modification of any regulatory documents (e.g., Proposed Plan, Decision Document, Remedial Design, etc.), DOE will submit its proposed modification to Ohio EPA for concurrence/approval, as applicable, and will allow for public comment, as applicable.

Recycling and/or reuse of materials at PORTS also could require the use of a large-scale, complex, centralized chemical and/or thermal treatment process (e.g., nickel decontamination and metal melting). The evaluation of such a facility, including implementation of treatability studies, is part of this alternative. However, should DOE have a preference to implement a complex treatment system, a modification to the ROD or another decision document would be required. This alternative allows for the long-term storage of nickel or other potentially recyclable material that may be retrieved.

### 12.3 SUMMARY OF THE ESTIMATED REMEDY COSTS

Capital costs include those for constructing, operating, and closing the OSDC; leachate treatment systems; support facilities; and construction of transportation conveyances. These costs include the costs of excavating, treating, and transporting contaminated fill. They also include the costs for off-Site waste transportation and disposal of D&D waste (RC-1) that does not meet the WAC or D&D waste (RC-1) that will be disposed off Site for other reasons. S&M costs are those long-term costs associated with maintaining and monitoring a closed landfill. Table 6 provides a breakdown of total unescalated project costs.

**Table 6. Cost Estimates for the Selected Remedy**

Project Cost Item	Cost
<b>UNESCALATED CAPITAL COSTS</b>	
<b>Direct Costs for OSDC:</b>	
Cell Construction	\$273,280,000
Infrastructure Construction	\$53,660,000
Interim Leachate Treatment System Construction	\$4,760,000
Cell Operations	\$158,440,000
Waste Transport to Cell	\$30,440,000
Off-Site Shipment and Disposal	\$154,370,000
Interim Leachate Treatment Operations	\$8,490,000
Cell Maintenance during Construction	\$1,920,000
Long-term Leachate Treatment System Construction	\$740,000
Land Use Controls	\$180,000
<b>Total OSDC Direct Cost</b>	<b>\$686,000,000</b>

**Table 6. Cost Estimates for the Selected Remedy (Continued)**

<b>Project Cost Item</b>	<b>Cost</b>
<b>UNESCALATED CAPITAL COSTS (continued)</b>	
<b>Indirect Costs for OSDC:</b>	
Regulatory documents	\$410,000
Predesign studies	\$9,150,000
Remedial design	\$34,600,000
<b>Total OSDC Indirect Cost</b>	<b>\$44,200,000</b>
<b>Direct/Indirect Costs for Other:</b>	
Recyclables Storage	\$14,530,000
Contaminated Fill	\$273,990,000
<b>Total Other Direct/Indirect Cost</b>	<b>\$288,500,000</b>
<b>TOTAL CAPITAL COST</b>	<b>\$1,019,000,000</b>
<b>S&amp;M COSTS</b>	
Long-term S&M cost—initial annual costs	\$670,000
Long-term S&M cost—eventual annual costs	\$130,000
<b>Capital Cost (Present Worth)</b>	<b>\$868,000,000</b>
<b>S&amp;M Cost (Present Worth)</b>	<b>\$14,000,000</b>
<b>TOTAL PROJECT COST (PRESENT WORTH)</b>	<b>\$882,000,000</b>
OSDC = on-Site disposal cell	
S&M = surveillance and maintenance	

Estimated unescalated capital costs for Alternative 2 are \$1,019 million (in FY 2013 dollars). The costs are associated with constructing 3.9 million cy of disposal capacity. The costs will increase for the construction of a 5 million-cy cell (see Section 14 of this ROD and Appendix L of the Waste Disposition RI/FS report). Postoperations S&M costs were also estimated, resulting in an initial \$670,000-annual cost in FY 2013 dollars for monitoring and maintenance of the OSDC, decreasing to a \$130,000 annually in the event a passive leachate treatment system is implemented. S&M costs associated with the off-Site disposal component of the on-Site disposal alternative are assumed to be included in the off-Site facilities' disposal fees.

A present value evaluation was performed by assuming a 1,000-year duration. The 1,000-year duration was selected to account for the performance period assessed for Alternative 2. The total present worth cost for Alternative 2 is \$882 million.

The following are additional assumptions that significantly affect total costs:

- Fill borrow locations evaluated in the cost estimate are contaminated soil areas, including select existing landfills (RC-3) and underlying soil associated with areas of groundwater contamination (RC-2). Any ARAR-compliant treatment costs are included. (See Appendix L of the Waste Disposition RI/FS report.)
- Davis-Bacon regulations regarding local prevailing wage rates will be in effect for construction and operations.
- Profit, fees, overhead, staff size, and management efforts are based on rates consistent with the current D&D contractor.

- No contingency costs are added to the on-Site disposal alternative cost estimate.
- No costs for long-term storage and eventual dispositioning of any wastes not meeting the WAC for on-Site or off-Site disposal facilities are included.
- The costs and schedule are dependent on the funding allocated. As the schedule increases for Alternative 2, the total capital costs of the alternative increases because there are routine costs that are required to operate the OSDC, regardless of how much waste is disposed.

The information in this cost estimate summary table is based on the best available information regarding the anticipated scope of the remedial alternative. Changes in the cost elements are likely to occur as a result of new information and data collected during the engineering design of the remedial alternative. This is an order-of-magnitude engineering cost estimate that is expected to be within +50 to -30 percent of the actual cost, excluding impacts to costs from schedule delays. Should significant delays to the project occur, the costs will increase beyond the +50 percent accuracy required by the DFF&O. An evaluation of cost increases caused by schedule delays conducted during the FS showed that a triple increase in the schedule would still result in Alternative 2 being less expensive than Alternative 3.

#### **12.4 EXPECTED OUTCOMES OF THE SELECTED REMEDY**

The RAOs will be met by implementing the selected remedy. Disposal of D&D waste (RC-1) will remove a potential source of human health and ecological risk by minimizing the chance of exposure to contaminants in the waste. After completion of this remedy, there will be no unacceptable risk from exposure to this waste and its associated contamination.

Implementation of the selected remedy could have some short-term impacts on the local environment. However, through careful timing of tree clearing, through contaminant migration controls in place during construction and operation, through mitigation plans to preserve archaeological resources, and through wetland and stream mitigation efforts, any impacts on the long-term condition of PORTS following completion of the remedy will be minimized.

### **13. STATUTORY DETERMINATIONS**

The purpose of this section is to provide a brief description of how the selected remedy satisfies the statutory requirements of CERCLA §121 (as required by the NCP §300.430[f][5][ii]) and to explain the 5-year review requirements for the selected remedy.

#### **13.1 PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT**

The selected remedy (on-Site disposal) is protective. Risk from contamination in the waste from D&D of building structures and associated equipment and materials (RC-1) is reduced by disposal in engineered facilities designed to be protective of human health and the environment. The OSDC will be designed and constructed to be in compliance with ARARs/TBCs and PORTS-specific work plans. Implementation of DOE Orders and requirements provides protection during implementation of the selected remedy. Long-term risk from the D&D waste (RC-1) is controlled by the engineering design of the OSDC, the WAC selected to control what materials are placed in the OSDC, the location of the OSDC, long-term monitoring and maintenance of the OSDC, and the use of long-term institutional controls to prevent alternate use of the facility that would damage the final cover.

## 13.2 COMPLIANCE WITH ARARS

The list of ARARs for this decision is provided in Appendix A. These ARARs are extensive, but they can be summarized as follows:

### 13.2.1 Chemical-specific ARARs

Chemical-specific ARARs provide health- or risk-based concentration limits or discharge limitations in various environmental media for specific hazardous substances, pollutants, or contaminants. The scope of this action is waste disposition and does not include remediation of environmental media. Therefore, no chemical-specific ARARs are triggered. However, if it is determined in the future that DFF&O wastes require treatment, specific ARARs would be triggered. Additionally, if treatment techniques are utilized for which there are no ARARs noted in the current Ohio EPA-approved ARARs list, the additional ARARs will need to be added to the existing ARARs list. DOE will also evaluate whether or not the additional treatment technique rises to the level of necessitating a note to file or a ROD modification.

### 13.2.2 Location-specific ARARs

Requirements that establish restrictions on permissible concentrations of hazardous substances or that establish requirements for how activities will be conducted on Site because they may occur in special locations have been identified for the selected action. Location-specific ARARs and TBCs were identified for the protection of wetlands, aquatic resources, and historic properties.

A number of location-specific siting restrictions and considerations were also identified. They impact where and how the OSDC can be constructed as part of an on-Site waste disposition action. These requirements are addressed in detail as action-specific ARARs/TBCs in Appendix A.

**Floodplains, wetlands, and aquatic resources.** Wetlands, floodplains, and aquatic resources are present on the PORTS Facility. The OSDC location is not within a 100- or 500-year floodplain, and none of the planned activities are expected to impact floodplain areas. Six jurisdictional wetlands in Study Area D, may be affected by construction activities for the OSDC and its haul roads. These wetland and aquatic resources will be appropriately protected or mitigated in accordance with the location-specific ARARs and TBCs, as appropriate. Activities will be designed to avoid or minimize impacts to wetlands. To mitigate impacts to wetlands that cannot be avoided, other wetlands will be restored, enhanced, or preserved elsewhere on PORTS at a ratio of 1.5 to 1 for nonforested impacted wetlands and a ratio of 2 to 1 for forested impacted wetlands. Currently, 0.348 acre of wetlands are anticipated to be impacted, resulting in a need to restore, enhance, and/or preserve 0.626 acre of wetlands. The final wetland impacts and details of the mitigation plan will be incorporated into the remedial design.

There are numerous streams in the area of the OSDC and support facilities location. An estimated 14,335 linear ft of streams in Study Area D may be directly impacted by construction of the OSDC. Of those impacted streams, 2,419 linear ft are a Class IIIA PHWH. To mitigate the estimated impacts on the streams at the OSDC location, it has been calculated that 14,335 linear ft of streams will be restored, enhanced, and/or preserved elsewhere at PORTS. This initial calculation of mitigation requirements resulted in a little over a 1 to 1 ratio using the estimated stream impacts and the quality of the streams assumed to be impacted. Should the actual stream impacts vary from that original estimate, the stream mitigation ratio will be recalculated using Ohio EPA's stream mitigation protocol. The final stream impacts and details of the mitigation plan will be incorporated into the remedial design.

**Threatened and endangered (T&E) species.** A PORTS-wide T&E species survey, which was completed in 1996, identified a number of potentially suitable habitats at PORTS for federal- and State of Ohio-listed T&E species, although only one state-listed plant species was actually observed at

that time. A more recent study focused on bat species, however, noted federal-listed Indiana bat habitat as being more widespread than previously mapped, including the mature forest areas in Study Area D (Ohio University 2012). Numerous efforts have been made to locate Indiana bats at PORTS between 2012 and 2014; however, to date, none have been found.

The northern long-eared bat has been shown to be present at PORTS. Near the end of the RI/FS process, the northern long-eared bat was proposed for listing as a federally-endangered species by the USFWS. USFWS made a final decision to list the northern long-eared bat as a threatened species in April of 2015. A Biological Assessment is being prepared for the northern long-eared bat to evaluate impacts throughout PORTS from the selected remedy (as well as the remedy being selected to address PORTS process buildings and complex facilities). DOE and USFWS have agreed to limit the timing of tree clearing during implementation of the selected remedy. Tree clearing that could impact roosting sites will only occur either when the bats are not roosting or as otherwise agreed to by USFWS. DOE will work closely with USFWS to implement other measures to protect the bat as appropriate. No long-term impact to the bats is expected from the planned tree clearing activities as there are plentiful available alternate roosting sites at PORTS.

**Cultural resources and mitigation of impacts.** Construction of the OSDC will have direct effects on areas of the PORTS Facility outside of Perimeter Road. As a result of the cultural resource surveys of the OSDC study areas, three sites in OSDC Study Area D were identified for further investigation. After additional study, two of the sites have been recommended as eligible for inclusion in the NRHP. Of the two historic properties, one will be able to be avoided due to specific design changes that have been made to the OSDC footprint. The other historic property will be adversely affected by the siting of the OSDC and will require mitigation measures. DOE has developed mitigation measures for the adverse effect to the one historic property where avoidance or minimization is not practicable.

The following mitigation measures for the adverse effects to the historic property will be performed:

- A data recovery effort (Phase III) of the affected site will occur. Coordination will occur with the Tribal Nations and the State Historic Preservation Officer on the data recovery effort before construction activities in the OSDC support area will begin. Recorded artifacts will be preserved at a recognized federal repository by a curation professional. A technical report documenting the data recovery processes and results will be prepared after this ROD is issued and will be shared with the OHPO. A summary-level report intended for a general audience will also be prepared in addition to the technical report as an aspect of public outreach (also see below). The data recovery effort will occur prior to the construction of the OSDC.
- DOE also maintains the PORTS Virtual Museum, which provides multimedia documentation of PORTS, its history, operations, oral histories, and its cleanup program, and includes links to published National Historic Preservation Act of 1966 (NHPA) reports. DOE will expand the information on the virtual museum to include information on the prehistoric activities in the area around PORTS by Native Americans. The Virtual Museum will be actively maintained until the D&D of site facilities is complete.
- Public outreach to local school districts and others will also be a mitigation component for the Waste Disposition Project. Public outreach efforts are ongoing and will continue until the DOE-Environmental Management mission is complete at PORTS. Outreach includes both active and passive measures, ranging from presentations to the provision of items for display and the publication of documents and updates about the site for members of the public.

- Development and issuance of a Comprehensive Summary Report summarizing all NHPA-related studies (prehistoric, historic-era, and DOE-era) to enable a better understanding of the breadth of history at PORTS. This document is in development and will be issued following the ROD.
- Pursue the placement of two State of Ohio historic markers that will offer information on PORTS history and prehistory. DOE will coordinate with the OHPO on the content of the markers. DOE will also coordinate with a local organization for the placement and maintenance of the historic markers. The markers are proposed for placement in the PORTS vicinity on well-travelled local roads that offer suitable space for safe viewing. DOE will pursue this effort following the issuance of this ROD.

The above activities will mitigate the effects of DOE's adverse impact on archaeological historic properties. DOE is not pursuing the creation of an Interpretive Center; however, before exiting the site, DOE will consider leaving a building for transfer to a local organization for the development of a multi-purpose facility to contain information about PORTS ranging from the prehistory of the area to the cleanup mission.

### **13.2.3 Action-specific ARARs**

The action-specific ARARs and TBCs identified in Appendix A address design, construction, operation, capping, and postoperations care for the selected remedy. The selected remedy will be completed in compliance with the substantive portions of design, construction, operation, capping, and postoperation care ARARs. These ARARs include landfill design and operation requirements under the federal TSCA for chemical waste disposition facilities; federal and state requirements under Subtitle C of RCRA, as amended, for hazardous waste disposition facilities; appropriate DOE Manual 435.1-1 requirements for LLW disposal facilities; state requirements under *OAC 3745-27* for solid waste landfills; and federal and state Clean Air Act of 1970 requirements for asbestos-containing material disposal facilities.

The ARARs applicable to the disposal of wastes in the OSDC include the requirements for a RCRA hazardous waste landfill (40 *CFR* 244 and *OAC 3745-57*) and a TSCA chemical waste landfill in 40 *CFR* 761.75. Further, the TSCA-related ARARs for chemical waste landfill design requirements generally follow the RCRA landfill design requirements. The TSCA ARARs, however, specify that if a synthetic liner is used, it must have a minimum thickness of 30 mil. In addition, they specify that the bottom of the liner must be located 50 ft above the historical high groundwater mark and must prohibit any hydrologic connection between the OSDC and any surface water (40 *CFR* 761.75[b][3]).

All primary wastes (e.g., concrete, PGE, asbestos, other building waste, and soil [RC-1]) and secondary wastes (e.g., contaminated personal protective equipment, decontamination wastes) generated during D&D and OSDC construction and operation activities must be appropriately characterized and managed in accordance with RCRA, TSCA, DOE Orders, Clean Air Act, or other requirements as specified in the ARARs/TBCs. Hazardous waste determinations will be based on available process knowledge and/or sampling/analysis results.

Wastewater generated at the OSDC will be treated on Site at a newly constructed facility (permanent leachate treatment system) for constituents expected to be present in leachate, contaminated storm water, and other wastewater generated. If effluent is discharged via the existing NPDES-permitted outfall, effluent would be discharged and monitored in accordance with the existing NPDES permit. If the existing NPDES permit needs to be modified, DOE would seek modification from Ohio EPA. If effluent is discharged to surface water via a new outfall (not associated with the existing NPDES permit), it would be discharged compliant with substantive ARAR requirements and limits would be submitted to Ohio EPA for concurrence/approval, as applicable, to ensure applicable limits found in permitting rules are

established. It is assumed that the wastewater treatment system would emit less than 10 lb per day of air contaminants in compliance with the de minimis emission limits of *OAC 3745-15-05(B)*.

It is anticipated that most treatment to meet physical or chemical WAC, as deemed necessary, will be conducted under the decision creating the waste. There are three types of treatment that may occur on the Site under the selected waste disposition remedy. The first will be the use of centralized size reduction and decontamination facilities that may be used across several waste streams to either support compliance with WAC or to support recycling and/or reuse. These centralized size reduction and decontamination facilities and associated ARARs are included in this remedy. Further information regarding the use of these centralized size reduction and decontamination facilities will be provided in the Waste Disposition RD/RA work plan and subsequent design documentation. Secondly, the waste disposition decision includes any necessary treatment to meet the OSDC WAC or ARARs of secondary wastes generated during the implementation of the selected remedy. While using non-DFF&O contaminated soil as fill for the OSDC is a component of this remedy, additional regulatory authorization/approval, as applicable, will be needed for excavation, treatment if necessary, and disposal in the OSDC. Finally, treatment that occurs at an off-Site disposal facility is covered under this selected waste disposition remedy.

To remove the disincentives to cleanup that the application of stringent RCRA land disposal restrictions (LDRs) and treatment standards to remediation wastes can impose, EPA has promulgated rules establishing CAMUs under RCRA to facilitate treatment, storage, and disposal of hazardous remediation wastes. These rules establish minimum design and operating standards for CAMUs and minimum treatment standards for wastes placed in CAMUs (CAMU-eligible wastes) in place of meeting LDRs. The rules also allow for mixing and blending of wastes in staging piles and similar physical operations intended to prepare waste for subsequent management and treatment. They also have a provision allowing off-Site placement of CAMU-eligible waste in hazardous waste landfills. Ohio EPA's concurrence/approval, as applicable, with this ROD designates the OSDC as a treatment, storage, and disposal CAMU and the IMTA as a treatment/storage CAMU.

Ohio EPA has considered the criteria set forth in *OAC 3745-57-72* and determined that the disposal, treatment, and storage CAMU satisfies all of the following required criteria:

- The CAMU facilitates the implementation of a reliable, effective, protective, and cost-effective remedy
- The management of waste at the designated CAMU will not create unacceptable risk to human health or the environment resulting from exposure to hazardous wastes or hazardous waste constituents
- The CAMU includes uncontaminated areas of the Site only to the extent inclusion of such areas is more protective than managing the waste at contaminated areas
- Wastes in the CAMU that remain after closure would be managed and contained to minimize future release, to the extent practicable
- The CAMU expedites the timing of remedial activity implementation



- The CAMU uses, to the extent appropriate, treatment to reduce the toxicity, mobility, or volume of waste remaining after closure of the CAMU
- The CAMU, to the extent practicable, minimizes the land area of the facility upon which wastes will remain in place after closure of the CAMU.

DOE has included the CAMU-required PHCs, and the corresponding CAMU treatment levels for CAMU-eligible wastes, in the final WAC presented in this decision. DOE has identified TCE as a PHC based on an extensive data set. Data collected in the future to support other decisions or implementation of response actions may indicate the potential presence of additional PHCs. Should additional contaminants be identified as normally subject to LDRs and as posing a significant risk to potential industrial user of PORTS (an ELCR greater than  $10^{-3}$  and/or a hazard quotient greater than 10), DOE will work with Ohio EPA to define an appropriate treatment level considering the requirements of the CAMU rule and to modify the WAC Implementation Plan, as appropriate, or ship the waste off-Site.

The primary justifications used to develop an adjusted standard for TCE under the (E)(4)(e) provision are as follows:

- 1) Dewatering of any soil containing free liquids including pure organic solvents would be the treatment method of choice.
- 2) Dewatering is considered a cost-effective treatment technology because other elements of the WAC prohibit the disposal of waste with free liquids present.
- 3) Residual TCE concentrations in the soil after dewatering are anticipated to be orders of magnitude below any levels required to be protective after disposal because of the robust design of the OSDC and the low permeability of the underlying bedrock. Therefore, use of dewatering would be a cost-effective and protective treatment technology.
- 4) A cost-effective means of handling the contaminated soil prior to use as OSDC fill (RC-2, RC-3) improves the opportunity to use contaminated soil as OSDC fill.
- 5) Finally, considering the need to protect the OSDC lining system, an adjusted treatment standard of 5,000 ppm was selected and is presented as part of the OSDC WAC, to represent the final maximum TCE contamination in the soil after dewatering, if needed.

Designation of CAMUs for the PORTS cleanup project promotes the cost-effective D&D of PORTS' structures and remediation of "residual soil" (as defined by the DFF&O). The rule also allows the project to consider use of non-DFF&O contaminated soil as fill (RC-2, RC-3) for placement of D&D waste (RC-1) in the OSDC, versus the alternative of purchasing clean soil. Considering the entirety of the PORTS cleanup and all potential waste streams anticipated for disposal in the OSDC, DOE has conducted economic and other evaluations of the trade-offs of using contaminated soil versus clean purchased soil as fill materials for the OSDC. (Note that all anticipated waste is to be considered as required by the DFF&O RI/FS statement of work [Attachment A of the DFF&O, Section 3.5.1].) This evaluation found that the use of contaminated soil can be done economically in a manner that is safe for the workforce; is protective of human health; and will not exacerbate the contamination already present in the areas in which fill could be contained. The use of contaminated soil from select landfills (RC-3) and contaminated soil associated with groundwater contamination (RC-2) as fill will remove considerable



mass of contamination from the environment quickly. It is also projected to save costs in the future by shortening the time required for active groundwater restoration efforts.

The CAMU rule and its flexibilities for developing cost-effective treatment levels is important to DOE both when considering the use of non-DFF&O contaminated soil as fill (RC-2, RC-3) to meet the extensive fill demands (2.65 million cy) anticipated for the OSDC, and when evaluating alternatives for other anticipated environmental media (RC-2) cleanup actions under the Ohio Consent Decree or other regulatory authorizations/approvals, as applicable. If a cost-effective TCE treatment level for non-DFF&O contaminated soil as fill could not have been established through the CAMU rule, PORTS project decision makers may not have had the economic motivations to seek non-DFF&O contaminated soil as fill as a preference, and would therefore be economically inclined to pursue the clean fill option; thus leaving the various compliant landfills in place without consolidation into the state-of-the-art OSDC and continuing with long-term groundwater extraction and treatment operations, as necessary.

More information on the justification for the CAMU designations and the TCE adjusted treatment standard can be found in Appendix B and in the Supplement No. 1 to the Waste Disposition RI/FS (DOE 2014). The appendix and supplement also identify the contaminated areas of PORTS as a single area of contamination (AOC). The noted boundaries of the AOC could change in the future if additional sampling results indicate a different lateral extent of contamination.

Only the substantive requirements of the ARARs/TBCs will apply to that portion of the D&D activities conducted entirely on Site under this alternative. Wastes transferred off Site or transported in commerce along public right-of-ways must meet all applicable federal and state requirements. These requirements include packaging, labeling, marking, manifesting, and placarding for hazardous materials in accordance with 49 *CFR* 170-180 *et seq.*

The action-specific ARARs, associated with siting the OSDC, are designed to guide facility placement and construction to ensure nearby sensitive resources are protected.

According to the DFF&O, ARAR waivers must be specifically identified and be in accordance with the NCP, and they must be agreed to by Ohio EPA in writing. Ohio EPA can relay its agreement with a waiver of an ARAR in either its concurrence with an applicable ROD, Action Memorandum, RD/RA work plan, Removal Action work plan, or in separate written correspondence. One ARAR waiver has been identified at this time to be required. A waiver of *OAC* 3745-2-07(H)(4)(d) requiring a 200-ft setback from waste disposed to streams, is needed. Concurrence/approval, as applicable, with this ROD signifies agreement by Ohio EPA on the waiver.

### **13.3 COST-EFFECTIVENESS**

This discussion explains how the selected remedy meets the statutory requirement to be cost-effective. A cost-effective remedy is one whose costs are proportional to its overall effectiveness. The overall effectiveness of a remedial alternative is determined by evaluating (1) short-term effectiveness, (2) long-term effectiveness and permanence, and (3) reduction in toxicity, mobility, or volume.

The selected remedy is cost-effective. Although expensive, the remedy will safely dispose of waste, generated during the demolition of the PORTS GDP buildings and structures (RC-1), in engineered disposal facilities. Although there are some short-term impacts to the environment from constructing a large disposal facility at PORTS, the impacts are not to sensitive resources and are less of a threat than the risks associated with transporting the D&D waste (RC-1) long distances. The local geology at PORTS is ideal for siting of a disposal facility because little water (or contaminants) can migrate through the

underlying bedrock. The D&D waste (RC-1) that will be generated is high volume but typically has low concentrations of contaminants, making treatment or other remedies less cost-effective than containment.

If the schedule increases, the cost of the selected remedy will also increase. However, an analysis conducted during the FS indicates that even if the schedule triples over the assumptions used in the original evaluation, Alternative 2 remains less expensive than Alternative 3. Therefore, the selected remedy remains cost-effective, even with a significant schedule delay.

#### **13.4 USE OF PERMANENT SOLUTIONS AND ALTERNATIVE TREATMENT (OR RESOURCE RECOVERY) TECHNOLOGIES TO THE MAXIMUM EXTENT PRACTICABLE**

The buildings at PORTS mostly have low levels of contamination, but the volume of generated D&D waste (RC-1) is anticipated to be large (over 1 million cy). Containment is typically used to address wastes with high volumes and low levels of contamination as treatment to achieve a permanent remedy is not practical. Accordingly, innovative treatment technologies were not specifically evaluated and selected. Some degree of treatment and permanence is possible through treatment that may be needed to meet on-Site and off-Site disposal WAC or transportation requirements. However, most of that treatment would be authorized under the decision documents for actions generating waste. This remedy allows for treatment in three cases:

- Centralized treatment such as size reduction and decontamination by physical or chemical (washing) processes to allow waste to meet an on-Site or off-Site WAC or recycling and/or reuse requirements. The location of a centralized treatment system can be anywhere on Site, including near the OSDC.
- Treatment of any DFF&O waste that may be conducted at an off-Site disposal facility prior to disposal. DOE will obtain the necessary approvals/authorizations, as applicable, and will meet all applicable requirements, including meeting the WAC, for the on-Site disposal of any DFF&O waste which is treated off-Site and returned to DOE for disposal in the OSDC/CAMU.
- Treatment of secondary wastes (those generated from OSDC operations), including wastewater and/or leachate, residual soil, and non-DFF&O contaminated fill with additional regulatory authorization/approval, as applicable (in compliance with ARARs and/or other regulatory requirements to meet the OSDC WAC).

Any applied treatment technologies are most likely to be proven technologies that are either already in use at an off-Site disposal facility, or that have been used recently in the demolition of other DOE facilities.

Some of the material may be reused and/or recycled under this Waste Disposition Project ROD. Reuse and/or recycling is considered to be a permanent technology.

#### **13.5 PREFERENCE FOR TREATMENT AS A PRINCIPAL ELEMENT**

In addition to the four statutory mandates discussed above, the statutory preference for treatment as a principal element is also addressed in this ROD. Treatment is not a significant element of the selected remedy for the reasons mentioned above. Most of the high volumes of D&D waste (RC-1) have low levels of contamination, which means treatment will not be cost-effective. In addition, the types of D&D waste (RC-1) are varied, which requires many different types of treatment technologies, which also would reduce the cost-effectiveness of the remedy. Under this remedy, treatment may be required for non-DFF&O contaminated soil as fill (RC-2, RC-3) or other OSDC secondary wastes to meet the WAC or ARARs, may be used off Site at a treatment and disposal facility, or may be through a centralized

treatment system implemented for many waste streams to support compliance with the WAC or recycling and/or reuse.

### **13.6 5-YEAR REVIEW REQUIREMENTS**

The NCP §300.430(f)(4)(ii) requires a 5-year review if the remedial action results in hazardous substances, pollutants, or contaminants remaining on Site above levels that allow for unlimited use and unrestricted exposure. Because waste that could pose a threat under unrestricted exposure will remain at PORTS under this remedy, a 5-year review will be required for this remedial action.

## **14. DOCUMENTATION OF SIGNIFICANT CHANGES**

The Proposed Plan for waste disposition was released for public comment on October 29, 2014. The Proposed Plan identified Alternative 2, on-Site/off-Site disposal, as the preferred alternative. The Proposed Plan identified the OSDC as a 3.9 million-cy facility based on the analysis conducted during the RI/FS. DOE has decided to increase the capacity of the OSDC to 5 million cy to accommodate the latest operational information as well as uncertainties in waste volumes. The original analysis did consider a location and a land area of 100 acres that will be the same for either capacity; therefore, the assessment of impacts to natural resources as well as ARAR compliance and short-term effectiveness evaluations have not changed. Likewise, the WAC analysis did consider the greater waste volumes so the long-term protectiveness evaluation does not change.

The only changes to the analysis would be an increase to the cost estimate. However, any cost increase from a change in capacity from 3.9 million cy to 5 million cy is within the original level of cost accuracy of + 50 percent to -30 percent. Because there are no impacts to the FS evaluation that was conducted by the change in OSDC capacity, this change is not considered significant.

## **15. REFERENCES**

DOE 2014, *Supplement No. 1 to the Remedial Investigation and Feasibility Study Report for the Site-wide Waste Disposition Evaluation Project: Proposed Corrective Action Management Unit and Area of Contamination Designations for Alternative 2 at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio*, DOE/PPPO/03-0646&D1, U.S. Department of Energy, Piketon, OH, October.

DOE 2013a, *Methods for Conducting Human Health Risk Assessments and Risk Evaluations at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio*, DOE/PPPO/03-0127&D7, U.S. Department of Energy, Piketon, OH, December.

DOE 2013b, *Methods for Conducting Ecological Risk Assessments and Ecological Risk Evaluations at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio*, DOE/PPPO/03-0215&D2, U.S. Department of Energy, Piketon, OH, March.

DOE 2001, *Quadrant II Cleanup Alternatives Study/Corrective Measures Study Final Report for Portsmouth Gaseous Diffusion Plant, Piketon, Ohio*, DOE/OR/12-1223&D5, U.S. Department of Energy, Piketon, OH, February.

DOE 2000a, *Independent Investigation of the Portsmouth Gaseous Diffusion Plant, Volume 1: Past Environment, Safety, and Health Practices*, Office of Oversight Environment, Safety and Health, U.S. Department of Energy, Washington, D.C., May.

DOE 2000b, *Quadrant I Cleanup Alternatives Study/Corrective Measures Study Final Report for Portsmouth Gaseous Diffusion Plant, Piketon, Ohio*, DOE/OR/12-1248&D6, POEF-ER-4590&D6, U.S. Department of Energy, Washington, D.C., March.

DOE 1998a, *Quadrant III Cleanup Alternatives Study/Corrective Measures Study Final Report for Portsmouth Gaseous Diffusion Plant, Piketon, Ohio*, DOE/OR/12-1360&D3, POEF-ER-4619&D3, U.S. Department of Energy, Piketon, OH, April.

DOE 1998b, *Quadrant IV Cleanup Alternatives Study/Corrective Measures Study Final Report for Portsmouth Gaseous Diffusion Plant, Piketon, Ohio*, DOE/OR/12-1332&D3, POEF-ER-4609&D3, U.S. Department of Energy, Piketon, OH, August.

DOE 1996a, *Quadrant I RFI Final Report for the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio*, DOE/OR/11-1231V1-5&D3, U.S. Department of Energy, Piketon, OH, September.

DOE 1996b, *Quadrant II RFI Final Report for Portsmouth Gaseous Diffusion Plant, Piketon, Ohio*, DOE/OR/11-1232/V2&D3, U.S. Department of Energy, Piketon, OH, September.

DOE 1996c, *Quadrant III RFI Final Report for Portsmouth Gaseous Diffusion Plant, Piketon, Ohio*, DOE/OR/11-1308/V2&D3, U.S. Department of Energy, Piketon, OH, December.

DOE 1996d, *Quadrant IV RFI Final Report for Portsmouth Gaseous Diffusion Plant, Piketon, Ohio*, DOE/OR/11-1180/V2&D3, U.S. Department of Energy, Piketon, OH, December.

DOE 1994, *Secretarial Policy Statement on the National Environmental Policy Act of 1969*, DOE Headquarters, Washington, D.C.

EPA 1991, *A Guide to Principal Threat and Low Level Threat Wastes*, OSWER Directive 9380.3-06FS, U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, Washington, D.C., November.

EPA 1988, *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, Interim Final*, EPA/540/G-89/004, OSWER Directive 9355.3-01, U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, Washington, D.C., October.

Ohio EPA 2012, *The April 13, 2010 Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action, including the July 16, 2012 Modification thereto*, Ohio Environmental Protection Agency, Columbus, OH, July 16.

Ohio University 2012, *Habitat Mapping of the Land and Vicinity of the United States Department of Energy (DOE) Portsmouth Gaseous Diffusion Plant, Portsmouth, Ohio (PORTS)*, Portsfuture Project, Voinovich School of Leadership and Public Affairs, Ohio University, Athens, OH, December.

U.S. Nuclear Regulatory Commission 2006, *Environmental Impact Statement for the Proposed American Centrifuge Plant in Piketon, Ohio*, NUREG-1834, April 2006, U.S. Nuclear Regulatory Commission, available at <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1834/v1>, accessed July 2011.

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### **PART 3. RESPONSIVENESS SUMMARY**

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## 1. INTRODUCTION

This Responsiveness Summary presents the U.S. Department of Energy's (DOE's) responses to comments received from the public review and comment period held November 12, 2014 to March 11, 2015, and at the public meeting held on November 17, 2014 regarding the *Proposed Plan for the Site-wide Waste Disposition Evaluation Project at the Portsmouth Gaseous Diffusion Plant* (DOE/PPPO/03-0312&D5) (Waste Disposition Proposed Plan). In addition to the verbal comments received in the November 17 public meeting, comments were received both by mail and via email during the comment period.

Public input is an important consideration in the selection of the final remedy. The Proposed Plan provided DOE's best solution based on all the regulatory requirements and the science available to the government, along with initial community input. The criteria that must be balanced when making a remedy selection are: Compliance with Applicable or Relevant and Appropriate Requirements; Long-term Effectiveness and Permanence; Reduction of Toxicity, Mobility, or Volume through Treatment; Short-term Effectiveness; Implementability; and Cost. Upon receipt of all the public comments, DOE evaluated these comments to determine if there was new or differing information, if errors were found, or if there is an alternate perspective that causes the technical evaluation to be modified or change the balance of pros and cons associated with the proposed remedy.

Each of the comments received on the Waste Disposition Proposed Plan provided helpful insight. Each of the comments was considered as to its potential implications to the Record of Decision (ROD). Based on this consideration, no changes were identified that fundamentally altered the remedy selected in the ROD with respect to scope, performance, or cost based on the comments received. However, some of the comments were considered when drafting the ROD to identify issues that require clarification or further explanation.

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## 2. INDIVIDUAL COMMENTS AND RESPONSES

This section provides an individual response to all 507 comments received on the Waste Disposition Proposed Plan. These written and verbal comments have been included verbatim as they were received with one exception; 454 comments were sent in the form of one of five template letters. For these comments, only a representative of each of the templates has been included in the main text of the responsiveness summary, along with an accounting of the number of times that particular comment was received. A list of names of the commenters for each template has been placed in Attachment 1 to this responsiveness summary.

### 2.1 Comment from Blaine Beekman.

I'm Blaine Beekman, Pike County Commissioner. What I'm going to do is, very quickly, read you the letter and the resolution that the Commissioners of Pike County passed today.

The Pike County Commissioners are pleased to comment on the Department of Energy's proposed plan for the disposal of waste to be produced from the decontamination and decommissioning of the Portsmouth Gaseous Diffusion Plant at Piketon.

We have been deeply involved in this discussion for several years. We have been quite vocal in our concerns over the on-site waste cell. Our first reaction was negative, but after much discussion with DOE, members of our community and our fellow Commissioners in Jackson, Ross and Scioto Counties, we reached a consensus. We could accept the low-level waste cell at Piketon if, in return, DOE would commit to a cleanup of the existing plumes and landfills on-site. That agreement has taken some time to materialize, but this document appears to cover the main points.

Of critical importance is the summary of the preferred alternative on Page 3. The recommended choice is Alternative 2, because it protects human health, safety and the environment. This is a particular interest to those Pike Countians who live near the Piketon facility. Commissioner Teddy West's property directly abuts the DOE reservation. Rumors of dangerous contamination in the existing landfills and leaking plumes have produced longstanding concerns. The second paragraph on Page 12 goes in to greater specificity, including the statement that, 'It is DOE's choice to use contaminated fill.' When one adds in the cost savings of Alternative 2, we agree with DOE that this is the correct approach for Piketon.

We certainly do not support the No-Action Alternative 1 nor Alternative 3. We have determined over the past three years that the best plan for the future of Pike County is the future vision worked out by DOE and Fluor, which would allow for the cleanup of the existing plumes and landfills and the future reindustrialization of the site. Alternative 3 does not address the plume and landfill issue. The failure to deal with this particular issue would leave several hundred acres of the proposed reindustrialization site unusable. Nor would it deal with the long-term community health threats presented by the continued presence of those plumes and landfills.

We appreciate the efforts of DOE and the Ohio EPA to work toward a practical plan for the cleanup at Piketon. We're happy to support the program outlined in this document.

Sincerely, Harry Rider, Teddy West, Blaine Beekman, Pike County Commissioners.

**Response:** The U.S. Department of Energy (DOE) appreciates the Commissioners' support for the preferred alternative specified in the Proposed Plan, including DOE's evaluation of contaminated soils from existing landfills and groundwater plumes at the Portsmouth Gaseous Diffusion Plant to obtain engineered fill for construction and operation of an on-Site disposal cell.

2.2 Comment from David Hurd.

My name is David Hurd. I'm from Jackson County, east of here. I'm here to support the waste disposal site here on the Pike County Uranium Enrichment Plant.

**Response:** The U.S. Department of Energy thanks you for your attendance at the public meeting and your participation in the public comment process.

2.3 Comment from Mark Johnson.

My name is Mark Johnson, and I'm the business manager for the Tri-State Buildings and Construction Trades Council.

We represent 33 counties in three states, and the total membership is about 20,000 members. Our jurisdiction goes from the coal fields of Southern West Virginia to Eastern Kentucky to north of Chillicothe, as far up river as Pomeroy, Ohio, down to Manchester, Ohio. We serve a lot of industrial customers in the tri-state area, including the Department of Energy.

I would like to thank everybody for all the efforts that's been put in to this, the various studies in the engineering of the disposal cell. We believe that it's highly engineered.

I personally have read the proposal from page to page and talked to many people in the industry. I believe it's the safe option. Many people in this room believes it's the safe option. It will create a lot of extra, positive economic jobs. There will be hundreds of jobs created by the preferred option. Also, there will be hundreds of jobs created with dealing with the plumes and the existing landfills.

I just want to say that we support the preferred option. Also, that we want to get the Record of Decision to be made as quickly as possible. I believe that funding for the site depends on us getting this Record of Decision, and we support the option. Thank you.

**Response:** The U.S. Department of Energy thanks you for your attendance at the public meeting and your participation in the public comment process.

2.4 Comment from Ralph Beatty.

I'm Ralph Beatty, a member of the Ohio Operating Engineers. I live in Jackson County. We do support the proposed plan for the on-site state-wide waste distribution. Thank you.

**Response:** The U.S. Department of Energy thanks you for your attendance at the public meeting and your participation in the public comment process.

2.5 Comment from Ricky Miles.

My name is Ricky Miles. I'm a Special International Rep for Laborers International Union of North America. I support the proposed plan, Alternative 2, as written.

For the last ten years, I've worked environmental cleanup of DOE sites. I've worked the Hanford site in Washington State, Idaho Falls site in Idaho, and the Oak Ridge Site in Tennessee. All of these DOE sites have on-site disposal cells which are absolutely necessary for the cleanup of these massive sites. Each one exceeds 4,000 acres of footprint.

I fully support the construction of an on-site disposal cell for Portsmouth, because without it, the site cannot be cleaned up. Without the cleanup of the site, reindustrialization is impossible.

**Response:** The U.S. Department of Energy (DOE) thanks you for your attendance at the public meeting and your participation in the public comment process. DOE would like to clarify that the disposal cell in Oak Ridge will occupy less than 100 acres when closed and the disposal cell along with buffer zone in Hanford is roughly 1,000 acres.

2.6 Comments from Norman Brooks, Jr.

(Comments from Norman Brooks were submitted twice during the public meeting. Both are included here but only one response is offered as the contents of the two comments were the same.)

Good evening. I would like to first start by saying my name is Norman Brooks, Jr. I'm from Scioto County. I live here. I am in full and total support of the proposed plans for the process buildings, as well as other complex buildings to deal with the D&D project. Thank you.

I'm Norman Brooks, Jr. I live in Scioto County. I'm in full and total support of the proposed plan of the Process buildings as well as other complex buildings to do with the D&D evaluation site.

**Response:** The U.S. Department of Energy thanks you for your attendance at the public meeting and your participation in the public comment process.

2.7 Comments from Jim McGraw.

(Comments from Jim McGraw were submitted twice during the public meeting. Both are included here but only one response is offered as the contents of the two comments were the same.)

My name is Jim McGraw. I'm from Scioto County. I have reviewed both proposed plans and I am in full support of both plans. Thank you.

My name is Jim McGraw. I'm from Scioto County, and I am in full support of the proposed plans. Thank you.

**Response:** The U.S. Department of Energy thanks you for your attendance at the public meeting and your participation in the public comment process.

2.8 Comments from C. J. Blevins.

(Comments from C. J. Blevins were submitted twice during the public meeting. Both are included here but only one response is offered as the contents of the two comments were the same.)

C. J. Blevins from Scioto County. I am in full support of the preferred plan.

C. J. Blevins from Scioto County. I'm in full support of the preferred option.

**Response:** The U.S. Department of Energy thanks you for your attendance at the public meeting and your participation in the public comment process.

2.9 Comment from Jeff Browning.

My name is Jeff Browning. I was with Local 265 in Cincinnati for 18 years. Eleven years, I spent at Fernald. Nine years, I was there building landfills. I support the landfills. They are safe. I was in there every day from the day they opened – turned the dirt over in Cell 1 until we capped Cell 1 in 2006.

They are safe if they are done right. They are a double-lined system. There's a lot more things than you realize. They are built very safe, and there's so many specs that you have got to go by. It's not just digging a hole in the ground. So I support them.

**Response:** The U.S. Department of Energy thanks you for your attendance at the public meeting and your participation in the public comment process.

2.10 Comment from Jody Crabtree.

Jody Crabtree. I'm a life-long resident of Pike County. I'm in full support of the preferred alternative of the on-site disposal cell. Thank you.

**Response:** The U.S. Department of Energy thanks you for your attendance at the public meeting and your participation in the public comment process.

2.11 Comment from William Landrum.

Alternative 2 is the proper alternative and the one that should be used.

**Response:** The U.S. Department of Energy thanks you for your attendance at the public meeting and your participation in the public comment process.

2.12 Comment from Tom Berry.

Tom Berry, and I live in Scioto County, and I support the proposed plans.

**Response:** The U.S. Department of Energy thanks you for your attendance at the public meeting and your participation in the public comment process.

2.13 Comment from Cole Coleman.

I'm Cole Coleman from Scioto County, and I support both plans.

**Response:** The U.S. Department of Energy thanks you for your attendance at the public meeting and your participation in the public comment process.

2.14 Comment from Shawn Caudill.

My name is Shawn Caudill from Scioto County, and I support both plans.

**Response:** The U.S. Department of Energy thanks you for your attendance at the public meeting and your participation in the public comment process.

2.15 The next 27 comments provided the following statement as Template #1, but were submitted by different individuals and the name, county, and address changed. The list of commenters is provided in Attachment 1 of this Responsiveness Summary. These comments stated:

I am (name); I live in (county) at the following address \_\_\_\_\_.

Proposed plan for the process buildings and complex facilities D&D evaluation project.

I am in full support: Preferred alternative #2 removes structures, treat as necessary and package waste for final disposition.

Proposed plan for the site-wide waste disposition evaluation project. I am in full support: Preferred alternative #2 combined on-site and off-site waste disposal, with the majority of waste remaining on the site in a newly constructed on-site disposal cell.

**Response:** The U.S. Department of Energy (DOE) appreciates your participation in the public comment process. DOE believes that the preferred alternatives in both Proposed Plans provide environmentally sound and cost-effective options for the Process Buildings and Complex Facility Decontamination & Decommissioning Evaluation and Site-wide Waste Disposition Evaluation Projects at the Portsmouth Gaseous Diffusion Plant site.

2.16 The next 76 comments provided the following statement as Template #2, but were submitted by different individuals and the name, county, and address changed. The list of commenters is provided in Attachment 1 of this Responsiveness Summary. These comments stated:

I am (name) and I live in (county) at the following address \_\_\_\_\_;

I support the proposed plans, the preferred alternatives, I know the on-site disposal cell will create jobs.

**Response:** The U.S. Department of Energy (DOE) appreciates your participation in the public comment process. DOE believes that the preferred alternatives in both Proposed Plans provide environmentally sound and cost-effective options for the Process Buildings and Complex Facility Decontamination & Decommissioning Evaluation and Site-wide Waste Disposition Evaluation Projects at the Portsmouth Gaseous Diffusion Plant site.

- 2.17. The next 120 comments provided the following statement as Template #3, but were submitted by different individuals. The list of commenters is provided in Attachment 1 of this Responsiveness Summary.

Comment on the proposed plans. The proposed plan for process buildings and complex facilities D&D evaluation project. I am in full support of the preferred alternative. Alternative 2. Controlled demolition of the buildings, treatment as needed and preparation for disposal. The proposed plan for the site-wide waste disposition evaluation project. I am in full support of the preferred alternative. Alternative 2. Combined on-site and off-site waste disposal, with the majority of waste remaining on the site in a newly constructed on-site disposal cell.

**Response:** The U.S. Department of Energy (DOE) appreciates your participation in the public comment process. DOE believes that the preferred alternatives in both Proposed Plans provide environmentally sound and cost-effective options for the Process Buildings and Complex Facility Decontamination & Decommissioning Evaluation and Site-wide Waste Disposition Evaluation Projects at the Portsmouth Gaseous Diffusion Plant site.

- 2.18 The next eight comments provided the following statement as Template #4, but were submitted by different individuals and the name, county, and address changed. The list of commenters is provided in Attachment 1 of this Responsiveness Summary. These comments stated:

My name is (name) and I live in (county) at the following address \_\_\_\_\_.  
I support the proposed plans.

**Response:** The U.S. Department of Energy (DOE) appreciates your participation in the public comment process. DOE believes that the preferred alternatives in both Proposed Plans provide environmentally sound and cost-effective options for the Process Buildings and Complex Facility Decontamination & Decommissioning Evaluation and Site-wide Waste Disposition Evaluation Projects at the Portsmouth Gaseous Diffusion Plant site.

- 2.19 The next 223 comments provided the following statement as Template #5, but were submitted by different individuals. The list of commenters is provided in Attachment 1 of this Responsiveness Summary.

Dear Ms. Wiehle:

I wish to submit comment of the DOE proposed plans for the D&D of existing Process and other complex buildings of the former Gaseous Diffusion Uranium Enrichment Plant and also for the the [sic] Site Wide disposal of the waste contained within these facilities as part of the D&D project.

I am in FULL SUPPORT of the preferred alternative, Alternative 2, the controlled demolition of the buildings and the waste being prepared for disposal.

I am also in FULL SUPPORT of the waste disposition preferred alternative, Alternative 2, the combination of both on and off site waste disposal, with the majority of the waste remaining on the DOE site in a newly constructed state of the art waste disposal cell.

Thank you and please enter this as part of the public comment record.



**Response:** The U.S. Department of Energy (DOE) appreciates your participation in the public comment process. DOE believes that the preferred alternatives in both Proposed Plans provide environmentally sound and cost-effective options for the Process Buildings and Complex Facility Decontamination & Decommissioning Evaluation and Site-wide Waste Disposition Evaluation Projects at the Portsmouth Gaseous Diffusion Plant site.

2.20 Comment from Unknown (signature illegible).

Was employed there 41+ years

Will cost at least 5 times the cost of construction to destroy it.

Agree with on site storage of low contaminated waste.

If nuclear power ever makes a come back, which it probably will have to since coal power is being out lawed this *itself* would be an ideal location location [sic] for a nuke plant.

[Signature Illegible]

**Response:** The U.S. Department of Energy thanks you for your participation in the public comment process.

2.21 Comment from Diana Cahall.

Dear Ms. Wiehle:

Please include my comments as part of the official record of proceedings on the above-referenced matter. Alternative 2 is the most practical and feasible of the the [sic] proposed alternatives. Alternative 3 is cost prohibitive considering the enormous volume of waste to be disposed from the process and support structures dismantlement, as well as volume to be generated as a result of "cleaning" this material.

The community acceptance of this alternative requires assurance(s) that only materials from the PORTS site to be disposed in an OSDC. It would be difficult to envision any member of the public [sic] advocating a DOE disposal cell from numerous other DOE sites be created literally in Piketon's backyard. Would DOE please explain more fully what materials and labs are referenced on page B-5, PROPOSED PLAN FOR THE SITE-WIDE DISPOSITION EVALUATION PROJECT, Prohibited Waste Streams by Agreement. Has DOE granted approval for "lab returns" from other sites? Which sites, and what volume/radioactivity levels are to be returned to PORTS? Also does "material currently stored on the Facility" include depleted uranium in any of its forms?

Thank you for providing me the opportunity to comment on this process.

Respectively submitted, Diana Cahall  
7019 Ashridge Arnheim Road  
Sardinia, Ohio 45171  
(937) 446-4583

**Response:** The U.S. Department of Energy (DOE) thanks you for your participation in the public comment process. The intention of the parenthetical statement in the waste acceptance criteria is that although there is a prohibition on the acceptance of waste from off-Site generating sources, that prohibition does not include lab returns and treatability testing wastes and material currently stored at the Portsmouth Gaseous Diffusion Plant (PORTS). When samples are sent to an outside laboratory to be analyzed or treatability tests performed, there is often some of the original material being tested remaining that must be returned for disposal. These are called lab returns or treatability study wastes. If this testing is done away from PORTS on materials/waste that came from PORTS, it is permissible to return these materials to PORTS and dispose of them in the On-Site Disposal Cell (OSDC). Material that originated at other facilities historically but were sent to and are currently stored at PORTS as of the date the Record of Decision (ROD) is signed can also be disposed in the OSDC. What this prohibition means is that waste currently stored at or generated in the future from other DOE, federal agency, or private sites cannot be disposed at the OSDC.

Neither the depleted uranium hexafluoride nor the converted oxide resulting from the depleted uranium hexafluoride conversion operations discussed in the comment are within the scope of the *The April 13, 2010 Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action, including the July 16, 2012 Modification thereto*. They were not evaluated for disposal (either on the Site or off the Site) in the Waste Disposition RI/FS and are not authorized for disposal by the Waste Disposition ROD.

2.22 Comment from Todd Downing.

GM

1. Current member working on the Project in the X326.
2. My view would be we get ready to have everything shipped by rail.
3. The cost difference not that much.
4. Considering we put any of this in ground it will never be reused.
5. Dressing in 3 layers sometimes just to get it ready to lower to begin process of disposal.
6. When this plant was built that had everything shipped in.
7. The right thing to do would take more time to disassemble and ship out by rail and truck.
8. How can we put a cost on future development and safety of all the surrounding residents?
9. Government used this area for 50 plus years the least they could do is make sure they put it back in original condition.

Thx for your time

Todd Downing  
308 E North  
Waverly, OH 45690

**Response:** The U.S. Department of Energy (DOE) appreciates your participation in the public comment process. This comment and response have been included in both the Process Buildings and the Waste Disposition Responsiveness Summaries.

DOE evaluated shipment and disposal of all waste off the Site (Alternative 3) and compared it to disposing of most of the waste on the Site with a portion disposed off the Site (Alternative 2). It is estimated that shipping all the waste off the Site (Alternative 3) would have twice the risk of a transportation-related injury and four times the risk of a transportation-related fatality as compared to Alternative 2, the preferred alternative. In addition, the cost difference between shipping wastes off the Site versus using on-Site disposal for most of the waste is estimated as \$228 million in the Proposed Plan. These two reasons, in addition to the fact that excellent geologic conditions and an engineering design of an on-Site disposal facility that meets stringent Federal and State requirements means that waste can be disposed at the Portsmouth Gaseous Diffusion Plant safely for the long-term, were the basis for proposing Alternative 2.

It is true that any material disposed in a disposal facility would not be available for reuse, whether the disposal is on the Site or off the Site. The Record of Decision adopts the following text, which is consistent with statements found in the Remedial Investigation/ Feasibility Study: "DOE is committed to the recycling and/or reuse of materials generated through [decontamination & decommissioning] D&D of the [gaseous diffusion plant] GDP facilities, in compliance with [applicable or relevant and appropriate requirements] ARARs. Prior to implementing recycling, DOE will evaluate and document the benefits (including disposal volume savings) against the additional costs of completing the action, implementing issues, and efforts with implementing associated policy issues. DOE will evaluate the individual materials and regulatory waste types throughout implementation of D&D and recycle and/or reuse materials at DOE discretion." DOE is committed to recycling and/or reuse of materials when appropriate.

Safety is of utmost importance to DOE and as such, workers handling contaminated materials must be protected during their work. Dressing in personnel protective equipment to handle contaminated equipment will always be required whether waste is disposed on the Site or off the Site.

2.23 Comment from Didi Hannah.

I am firmly against the onsite disposal cell to collect contaminants, waste, etc. from this plant that had been initiated in 1953. My dad worked here for over 40 yrs. and brought our family from West Virginia where my mom and dad established our family in Piketon, they bought a house and had employment here. I was 3 yrs. old when we moved to Piketon in 1953, my brother was 4 yrs. old. My dad traveled back and forth, carpooled to work here prior to us relocating here.

I live at 586 Schuster Road where my husband and I built a nice home almost 9 yrs. ago and I have worked at the Piketon plant for 37 yrs. and one of those OSDC has been identified to be in the location behind my property. Do you realize what the value of our new home setting on 3.8 acres and land will be? I only want to work 5 more yrs. and then I'll be 66. We will lose money if we decide to sell and if we can even sell in order to retire in a southern state. My son and daughter were raised here in Piketon along with my three grandsons. They went to school in Piketon and I have a right to be upset with the decision making regardless of what EPA states.

But I feel privileged to voice my disagreement to you regarding the OSDC, but you know as well as I know that the decision has already been made. It's clear that you are formally representing the technical involvement for public voice through e-mail addresses, literature mailed at homes, setup meetings at the school, phone calls by the PR, etc. My dad died in yr. 2007 and absolutely loved this plant, he enjoyed working with the many people that he grew to know over many years of on-site job contacts. My mom is still alive and will be 90 yrs. old in February. They both grew up during the depression and she has seen a lot of changes and development in Pike, Ross, Scioto counties since the beginning of this plant's operation along with us, but I still disagree with these plans for the OSDC.

Thank you for your concern.

Didi Hannah  
586 Schuster Road  
Piketon, OH

**Response:** The U.S. Department of Energy (DOE) thanks you for your participation in the public comment process. DOE recognizes your concern regarding the value of your property with construction and operation of the On-Site Disposal Cell (OSDC). DOE will work closely with neighbors of the site during construction of the OSDC to answer questions and resolve any issues in a timely manner. As depicted in the Proposed Plan, once completed, the OSDC will have a grass-covered cap and will blend in with the topography of the landscape around the Portsmouth Gaseous Diffusion Plant. It is anticipated that it will be no higher than tree top level.

Discussion on this evaluation is presented in Section 9.2.2.2.2 of the Remedial Investigation/Feasibility Study Report. In summary, the U.S. Environmental Protection Agency (U.S. EPA) has conducted reviews of the potential correlation between property values and the location of Superfund and other contaminated sites. These reviews have found that most property value impact studies are ill-fitted to the task of identifying causal linkages between the price effects they evaluate and the impact of U.S. EPA cleanup actions. (See U.S. EPA, Superfund "What Does the Evidence Say About Property Value Studies to Assess the Benefits of the Superfund Program" [<http://www.epa.gov/superfund/programs/recycle/effects/property.html>]). The studies performed, for the most part, evaluated the effect of the discovery and remediation of an improper disposal site and not simply the construction of a landfill. While property price effects from a permanent on-Site disposal action are inconclusive, the short-term period (i.e., during active disposal facility construction and operation) impacts to adjacent land parcels, if any, from construction, operation, or final capping of the OSDC (e.g., noise, light, fugitive dust) would be mitigated to the extent practicable.

2.24 Comment from Vina Colley.

Hi, I'm Vina Colley. I represent PRESS, Portsmouth Piketon Residents for Environmental Safety and Security, and National Nuclear Workers for Justice.

I have been fighting this facility for cleanup now for, gosh, since about '85, '86. It's been devastating watching my coworkers, my community and people that I love pass away from cancer and all these illnesses. It's also devastating to watch the workers who worked here at this plant back in the '80s and the '90s still fighting for their compensation.

I am not for this waste cell. No. 1, we have a bedrock that has infractions.

No. 2, the cell that they had at Fernald got a cut in the lining and they had to go in and fix it. You can't guarantee me that this cell isn't going to leak. I'm not for demo – just going in and destroying these buildings. They have to be taken apart piece by piece by piece. This facility was on the Superfund list – it didn't make the Superfund list, but we dealt with it, and they sold it without the consent agreement. So none of the workers at this facility are being told that this facility here is one of the worst facilities for contamination. I wasn't prepared for a speech tonight, but it's been over one year since you've had public participation, to where people could really understand what you're doing.

Now you can get all the commissioners in Jackson and all the surrounding counties to come in here and say what we want. We want jobs and we want cleanup. We have never been for shutting down this plant. Because if we continue to do this cell, there's no guarantee that we're not going to be the national dump place in the United States. I have saw the list of the facilities that aren't going to be a dump site, but our name is not on that site.

We have – I read a story through Mary Perdium (phonetic) that we had plutonium at the site in 1999 when we weren't supposed to have plutonium. Because of the plutonium, they downplayed the problems with the plutonium. We had it shipped in here from West Valley, New York, from Paducah, from Hanford, and it got played down that plutonium and neptunium are here.

It's really heartbreaking to know that these workers, who are new workers right now, will not be in the compensation bill because they cut that compensation off in '92. And the workers are still sick – like myself, they are still sick and still fighting this compensation bill.

So can you guarantee me that these workers aren't going to be exposed to this plutonium that's being covered up, and this neptunium, plus all the other toxic chemicals that you have?

Like I said, I just found out about the meeting and it hasn't been long enough to go over all of this. I don't know how we're going to get rid of the waste. I don't know if we can just put it on a concrete pad, put it up there where we can watch it and monitor it. If you want to tear the buildings apart, then these workers are going to have to take their time and go pipe-by-pipe. Inside these pipes in those process buildings, the 330, the 333 and the 326, we have polychlorinated biphenyl, which is called PCB. In these PCBs, we have plutonium, uranium, neptunium and all the radioactive daughter

Okay. We have had 15 earthquakes since 1975, I think. Fifteen earthquakes. We have already got a bedrock underneath this facility that's also a groundwater – Teays River Valley that we're

sitting on. We have already got an infraction of the bedrock, and you want to put this cell underground. It just blows my mind.

I would like to see you come to Portsmouth – I would also like to see you go out in the community and go door-to-door to these poor people that are sick and tell them that you're trying to make a dump site out of this facility. And there will be no jobs, no jobs, once you put all this waste in that cell. So if you guys want jobs, you better fight and say you don't want that cell.

**Response:** The U.S. Department of Energy (DOE) thanks you for your attendance at the public meeting and your participation in the public comment process. As stated in the Record of Decision (ROD), the selected location for the On-Site Disposal Cell (OSDC) is Study Area D in the northeast corner of the DOE reservation. DOE has conducted numerous geologic investigations and concluded that competent unfractured bedrock formations (i.e., Cuyahoga and Sunbury shale) underlie the selected location. This location is on top of a hill and is not located above the ancient Teays River Valley mentioned in the comment which was filled by the Gallia and Minford formations millions of years ago. Therefore, the shallow groundwater present in the Gallia formation is absent in the selected OSDC location. The selected location has very good surface drainage features and the existing ground surface is up to 175 ft above the regional aquifer which is in the Berea sandstone formation.

The Fernald on-site disposal facility was constructed, operated, and closed between 1996 and 2006. During installation of the geomembrane liners, both vacuum and hydraulic testing were used to identify any holes in the liner material received from the manufacturer. If identified, holes were repaired by patching during installation. This is a standard quality control process used for installations of these types of liners. After installation of the liners and during operations (i.e., waste placement), there were no leaks or holes in liner material found that required repair. Further, there has been no incident associated with liner failure or a liner being cut after closure of the Fernald disposal facility that would require any repair to the liner material. DOE continues to conduct post-closure leachate collection and treatment, groundwater monitoring, and surveillance and maintenance with oversight by the Ohio Environmental Protection Agency (Ohio EPA). The actual monitoring data confirms that the Fernald disposal facility is functioning as designed.

Appendix B of the Waste Disposition Proposed Plan and Section 12.2 of this ROD present the final waste acceptance criteria (WAC) for the OSDC. The WAC consists of seven individual components, which are required by the *The April 13, 2010 Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action, including the July 16, 2012 Modification thereto*. A waste stream must meet every component of the WAC before it is allowed to be disposed in the OSDC. WAC Component 1B presents "Prohibited Waste Streams by Agreement" and specifically prohibits "Off-[Portsmouth Gaseous Diffusion Plant] PORTS generated waste." This is defined as: "A prohibition on the acceptance of waste from off-PORTS generating sources (excluding lab returns and treatability testing wastes and material currently stored on the Facility)." This prohibition means that wastes currently at or originating in the future from other DOE, federal agency, or private sites may not be disposed at the OSDC.

All known and potential radiological and chemical contaminants in buildings and environmental media at PORTS (including polychlorinated biphenyl [PCB], plutonium,

uranium, neptunium and associated radioactive daughters) were evaluated during the development of the WAC for the OSDC according to the applicable or relevant and appropriate requirements and performance objectives as presented in the Remedial Investigation/Feasibility Study. Only acceptable wastes generated at PORTS that meet the Ohio EPA-approved WAC will be placed in the OSDC. As a result, a portion of the waste, such as the process gas equipment from the X-326 Process Building, will be disposed off the Site. DOE has a good data set defining potential contamination of the structures and equipment by radionuclides (including plutonium and neptunium) and PCBs.

The protection of the public and the workforce during cleanup of PORTS is a top priority for DOE. The hazards associated with all work proposed at PORTS will be evaluated and appropriate protection measures will be implemented before any work is performed. Workers will be aware of potential hazards, will be required to use the necessary protective equipment, and will be required to take necessary steps to minimize hazards associated with planned work. The current plan to demolish the buildings with heavy equipment is more protective of workers than putting the workers into the building for years, dismantling the structure by hand. The worker safety concern with manual dismantlement in addition to the increased efficiency of using heavy equipment is why that technique was selected. Hazardous materials that could be dispersed during heavy equipment demolition will be removed or controlled before demolition.

South central Ohio is in a relatively low seismic hazard region (i.e., 2 percent probability of exceeding 7 percent gravity [g] peak ground acceleration in 50 years) according to the 2014 U.S. Geologic Survey national seismic hazard map. (Percent gravity is a measure of the shaking that might occur during an earthquake. For comparison, areas near the New Madrid seismic zone in western Tennessee/Missouri and in San Francisco along the San Andreas fault have a 2 percent probability of exceeding 80 percent g peak ground acceleration in 50 years.) Also, based on U.S. Geologic Survey information, there is less than 1 percent probability of a magnitude 5.0 or greater earthquake in the PORTS area within a 50-year period. Updated seismic design criteria were applied in the OSDC design. Intensive field studies conducted by DOE with Ohio EPA's oversight in the last three years verified that the geological and hydrogeological conditions at this site are protective. This conclusion confirms the available information from the Ohio Department of Natural Resources. Design and construction of the OSDC will use all the existing protective natural features at this site with additional man made enhancements and barriers to contain the acceptable decontamination and decommissioning wastes and provide long-term protection of human health and the environment.

## 2.25 Comment from Jeff Walburn.

My name is Jeff Walburn. I'm here representing myself. The previous comment that I made, I wanted to make that clear. I've had many discussions – I'll just bring up Hanford, Washington and the current problem at Hanford, Washington.

I've had many discussions with Senator Wyden, and Dave Becker, who is on his finance committee, who is a state away. So the State of Oregon is very interested in what the State of Washington and their federal facility is doing. You had whistle-blowers, Walt Tamosaitis and Donna Bush. Walt Tamosaitis was a 41-year engineer on-site, worried about safety, lived at the site, loved his community. He tells the subcontractors and DOE, you're off on your factoring

plutonium and your waste tanks. They were off by a factor of ten. That's a problem when you can't estimate your plutonium on-site, being off by a factor of ten. Walt Tamosaitis has just gotten the first whistle-blower case that we know of against a DOE subcontractor relationship.

The burial of this material on the Piketon site is not an option. We have qualified workers led by Herman Potter, that are highly qualified, giving the input in how the work is to progress. Charles Lawson and myself have been on the 20-year investigation of DOE and their subcontractors and regulatory oversight of this site. We know what they say and we know what they do.

Now, because of this investigation that people know that we're on, people from the plant now – Herman don't know who they are. They come and fall down – my collar is red, it's not white. People fall down on their knees and start making admissions of criminal wrong, or things that they were told to do, that they know is not proper. And they are going to their union officials and their union officials have to make a deal with the devil to get work.

They are telling us these things and we're saying, "Stand up. Straighten your back and stand up." They say, "Well, we don't want things to happen to us like they were happening to you, being threatened with your life," like with Charles Lawson and myself. Or to have to testify in the United States Senate about wrongdoings of DOE and their subcontractors who are not to be trusted, and incestuous relationships. And that – that is a quote from the USW magazine.

Now, when people here come up, all of the different locals – I know you want work. We all want work. But I have reports of previous remediation workers at the Portsmouth site that DOE lost all their records. Well, now when these people go to get benefits, sorry, we don't have your records. We lost them.

Or that they were taped over, as in our workforce. Our dose histories were supposed to be kept for 30 years and one day, taped over by mistake. Racks and racks of previous dosage history taped over by mistake, and only a \$2,500 fine by OSHA. Only a \$2,500 fine?

In wrapping up, I would like to know how a worker right now, knowing that something is wrong – many of the workers that are old heads, gray beards that know right from wrong, that worked in the 700, worked in the 705, worked in the process when it was active, are saying, "Man, I had to get out. We were doing some wrong things." They were cutting pipes and dropping them and doing some unsafe acts. And these young guys are coming in here that just want work, and they are saying, "Well, I have to do it. They told me."

They are not like Walt Tamosaitis, who is a 41-year engineer that can make a living. They have to depend on the honesty [sic] of DOE.

**Response:** The U.S. Department of Energy (DOE) thanks you for your attendance at the public meeting and your participation in the public comment process. The protection of the public and the workforce during cleanup of the Portsmouth Gaseous Diffusion Plant (PORTS) is a top priority for DOE. The hazards associated with all work proposed at PORTS will be evaluated and appropriate protection measures will be implemented before any work is performed. DOE's contractor has a strict Environment, Health, and Safety Policy that applies to all persons (whether contractor employees, contract labor resource personnel, or subcontractors) working on behalf of DOE at PORTS. All shall follow this policy and



report safety or environmental concerns to management. Managers are required to provide a workplace where environment, safety, and health concerns are encouraged to be brought forward without fear of reprisal. Persons executing work at PORTS are required to work safely, follow policies and procedures, and stop work and notify management of unsafe work conditions or processes and adverse impacts to the environment.

2.26 Comment from Chick Lawson.

Chick Lawson. I live in Scioto County, in Lucasville. I was an employee out here at the plant.

Talking about trust, as the individual just – this other man. Right now, I do not trust DOE, and there's actual reasons for that. I was an OSHA certified investigator. DOE allowed them to destroy all our health – our radiation records. They allowed them to put them through a wood chipper, which allowed just about an 80 percent turn-down rate on the so-called reconstruction on what our dose records were. I saw the records before they were thrown through the wood chipper. They were nice enough to send me to school to learn how to read these. And the guards ourselves – I can't speak for Herman's people. But we were receiving anywhere from 6.2 to 12 rem a year. That's a fact that I will stand on.

The records got put through a wood chipper. That's why we have such a high cancer rate with the guard department, and it's one reason we have such a low – an 80 percent turn-down rate. Because now with what's being done and how it's being done, we cannot meet the 50 percent causation.

One of my questions – I would like to ask a question that I did not ask in Q&A. When the pilot plant, part of the pilot plant that is buried on plant site, DOE sent nickel materials there to be resmelted and the plant became contaminated. We were not informed that this was contaminated material and people got sick. Now they have people sick that cannot get their benefits. Part of that plant is built – is buried on this facility at Piketon. Part of it is buried over in West Virginia.

That happened because DOE, and you're wanting us to trust you, sent material there and did not inform them that this material was radioactive when they started smelting it back down to get the nickel and stuff. So now, what's left over there on the West Virginia side, they are paying \$250,000 a year to an EPA fine because of the runoff of contamination that's coming out of there.

My question that I would like to get an answer to eventually is, what's going to happen? Is that pilot plant that's buried here, is that going to be razed and that gotten rid of?

The other thing, with what happened at Mound when they did the things down there, they are still having trouble with that. It's still not right. Some of the things – when I talked with the people at Rocky Flats, after they took those buildings down and then buried them on-site, they are having problems. Everybody is saying, "Don't let them build it. Don't let them bury it on-site, because DOE cannot be trusted."

I have to agree with that. I'm not pointing at Joel or anybody individually, but I just know from the past that they have not been trustworthy. They have allowed things to happen purposely. They allowed contractors to do things that they knew were hurting people. Gene Gillespie says, "Hey, regs change and so do we." That's just basically the way it is.

We have people here, their kids have died from brain cancers and things. They know that a lot of this was passed on through our work, but yet we can't get it recognized. I think that what – that putting this here is not good. That's basically the way I feel about it.

Some of the people, other than myself, that's not here – they, unfortunately, couldn't be here, but they are not real happy about it, either. Thank you very much.

**Response:** The U.S. Department of Energy (DOE) thanks you for your attendance at the public meeting and your participation in the public comment process. DOE is responding to each of your points concerning the waste management decision individually.

1. DOE assumes the plant referred to in the comment is the Nickel Powder Processing Plant. Part of this plant was disposed in the X-749A classified landfill in 1979 (source: *Quadrant I Cleanup Alternatives Study/Correctives Measures Study Final Report for Portsmouth Gaseous Diffusion Plant, Piketon, Ohio*, DOE/OR/12-1248&D6). As part of the selected remedy, the X-749A landfill is being considered to be excavated to obtain fill soil for operating the On-Site Disposal Cell (OSDC). During excavation, waste removed from the X-749A landfill that meets the waste acceptance criteria (WAC) for the OSDC will be disposed there. Waste from the X-749A landfill that does not meet the OSDC WAC will be shipped to an appropriately licensed off-Site disposal facility. Safety and environmental controls will be established during the excavation of the landfill and operation of the OSDC to protect workers, the public, and the environment. If a different fill strategy is chosen and the landfill remains in place, the buried material will safely remain in place under a state-approved cap which is compliant with regulations and the final approved remedy.
2. DOE did not construct an engineered on-site disposal facility at the Miamisburg, OH or Rocky Flats, CO sites. Instead, DOE chose remedies that permanently left building foundations in place underground. DOE is proposing a completely different approach at the Portsmouth Gaseous Diffusion Plant which involves excavation of above-grade and much of the below-grade structures and placement of the waste in a new, permanent, engineered OSDC. Under Ohio Environmental Protection Agency oversight, the OSDC will be designed, constructed, operated, closed, and maintained and monitored in the future to meet numerous regulatory requirements.

2.27 Comment from Dave McClay

Comments for both Process Buildings and Waste Disposition are as follows. The PORTS site needs to be left in a post D&D condition that's fully attractive and accommodating to safety conscious general and/or nuclear industry that will enable safe high labor grade paying jobs for this area. My perception of the condition would be equipped with fully functioning/upgraded utilities and services such as water, sewage, steam, electric, natural gas, waste services, railroad connection, internet backbone connection, restored helicopter pad/runway, emergency services 24/7 and maybe even laboratory and machine shop capabilities. However, it would be good to see a survey performed to find out what general industry is looking for much like DOE sought input, via Ohio University, from the community on the future of the site. As for the waste, after looking over the publications presented to the public, I am in favor of shipping all the waste off site because I don't see how buried waste on the property of the magnitude presented can be part of an attractive industrial friendly environment. The cost difference is considerable millions but

in the larger picture it's only a year or two of standard budget and it may cost twice that or more if the waste needs moved again at some point in the future. Also, the offsite areas of disposal are much lower citizen population density and present a lesser potential problem in those locations. If a disposal cell is built as an industrial utility for the future use of the site I would [sic] to still see the process piping and equipment that came in contact with UF6 to not be placed into the proposed on site waste cell but rather shipped off or stored for recycling efforts to occur.

Thank you for the opportunity for commenting on the future of our community.

David McClay  
Lucasville, Ohio

**Response:** The U.S. Department of Energy (DOE) thanks you for your participation in the public comment process. This comment and response have been included in both the Process Buildings and the Waste Disposition Responsiveness Summaries. DOE understands the public's desire for improvements to the existing infrastructure to help reindustrialization. The scope of the selected remedy includes the potential removal of essentially all man-made improvements supporting the gaseous diffusion plant (GDP), including site rail, roads, power, and water treatment systems. However, DOE is committed to work with the community, including the Southern Ohio Diversity Initiative, to identify those opportunities where infrastructure can cost effectively remain behind after cleanup is complete. It is important to note that DOE has not currently been appropriated, or expects to be appropriated, any funds that would allow DOE to spend those funds on maintaining or upgrading existing infrastructure solely for the purpose of reindustrialization by future users of the facility after transfer. DOE's appropriations are for the purpose of cleaning up the GDP. With that said, the reasonably anticipated future land use, i.e., reindustrialization after transfer, is a vital component of the overall cleanup approach.

Under a DOE grant, Ohio University has conducted additional research and outreach to identify viable industries to target for future use of the Portsmouth Gaseous Diffusion Plant based on a match of industry needs and site assets. Results of the Ohio University efforts will be publicly available at [www.portsfuture.com](http://www.portsfuture.com).

With regards to Waste Disposition, Alternative 2 was selected as the preferred alternative because it best satisfies all the criteria to be considered in selecting a remedy in accordance with the process prescribed by the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 117(a), and the National Contingency Plan 40 *Code of Federal Register* 300.430(f)(2). Cost is not the only consideration in the selection of the preferred alternative.

Waste acceptance criteria have been developed for the On-Site Disposal Cell (OSDC) that ensure public health, workers, and the environment are protected during operations and after closure of the facility. As part of the waste acceptance criteria, process gas equipment (converters, compressors, and coolers) from the X-326 Process Building will not be allowed to be disposed in the OSDC. However, other process piping and equipment that meets the other elements of the waste acceptance criteria will be allowed to be disposed in the OSDC.

2.28 Comment from Theresa Workman.

Mrs. Kristi Wiehle (DOE),

Comments and thoughts on both process buildings and waste disposition are as follows. It is important to me for the future of this site that we keep it clean and attractive for the opportunity to re-industrialize. It is vital to this area and the people in the surrounding communities that we think about the long term effects of the decisions that we are making today. I know that it may seem like the thing to do and it may save money today, but what about the future of the site and the community. It would be easy to demolish the buildings and bury them in the waste disposition cell but I am asking that DOE think of the future and how this will impact decisions that will have everlasting effects on the site from this point on. Doing this will leave other industries and companies looking at this site as a waste grave yard and discourage them from considering this site as a choice to bring new business. This community needs new industry and business and this will put an end to the possibilities and hopes for the future. It may save a dollar today but think of how much this will cost our future and the future of the surrounding communities. The waste should all be shipped off site and the reservation should be cleaned up. This is the only way to keep it an attractive desirable value [sic] that will bring industry and jobs for the future of our communities.

Thank you for this opportunity to comment and voice my thoughts on the future of this site and the surrounding communities that will be impacted on the decisions that will be made.

Sincerely,  
Theresa Workman  
FBP/USW Safety Representative  
Fluor-B&W Portsmouth, LLC  
P.O. Box 548  
Piketon, Ohio 45661  
Office: (740)289-2331 Ext: 4159  
E-mail: [theresa.workman@fbports.com](mailto:theresa.workman@fbports.com)

**Response:** The U.S. Department of Energy (DOE) thanks you for your participation in the public comment process. DOE does not prefer a combined on-Site/off-Site disposal alternative solely because the cost is lower. The alternative was selected because it provides a safe, balanced solution for all communities affected by the decision and is the most cost effective.

Community economic development professionals have commented on the Proposed Plans, stating that the proposed construction of an on-Site disposal cell (OSDC), when combined with excavation of all the landfills and plumes within Perimeter Road for fill, provides a better opportunity for reuse of the Portsmouth Gaseous Diffusion Plant (PORTS) than shipping all the demolition waste off the Site and leaving the existing landfills and groundwater plumes in place. Removal of existing landfills and plumes as part of construction on an OSDC can make more of the industrial area within Perimeter Road available for redevelopment. Based on this feedback, DOE does not believe that construction of an OSDC will make PORTS less attractive to other industries.

2.29 Comment from Kevin Shoemaker.

I'm used to short jokes, so that was okay. Quite frankly, I'm here on behalf of Southern Ohio Diversification Initiative. I'm their counsel. I'm here to speak to the alternatives.

The Southern Ohio Diversification Initiative supports the alternative that was selected by the Department of Energy on the condition that the groundwater plumes and the landfills are cleaned up and consolidated. The difficulty becomes in the language that's used in the plan. The language that's used in the plan is permissive and allows several ways for the Department of Energy to kind of back out of things.

To kind of echo what Dan Minter said and what Val Francis said, is that that's an important piece of this. The problem right now is that it's all based upon trust. As I read the plan as a lawyer, it's pretty clear to me that lawyers wrote that. I don't think anybody is going to trust lawyers. Unfortunately, the only people trusted less than lawyers are Congress and the administration.

So at this point in time, the way to fix this plan and the way to fix the ROD is to include mandatory language that says the Department "shall" do certain things, as opposed to "it may," or where it has a lot of things where it can back out of those obligations. Those obligations affect people. They are not just – this just isn't land. It's just not buildings. It's just not those things. They affect people.

The health and safety that is placed into this particular alternative is based upon the cleaning up of those plumes and landfills. And the four people, and more than this, that are sitting at this table, we have great confidence in. That's not the problem. The problem is, as this gets further away from the people sitting here, it starts to get to people who couldn't find Piketon on a map. That's the concern.

We are requesting, as the Southern Ohio Diversification Initiative, that mandatory language go into that ROD that says very clearly that those plumes will be cleaned up and that the landfills will be consolidated. Otherwise, all we have is a promise.

I just recall that when my daughter was little, she would always look at me after I promised something and she would say, "A promise is a promise, Dad." So I got to the point where I always used language like that's in that plan, that kind of left me an out, to say, "It wasn't really a promise. I said that we might go do this."

Our problem is, from the Southern Ohio Diversification Initiative, for the things we do for the community, to try to help this community, we would request that there be absolute mandatory language in the plan, in the ROD, and we know that you folks at this table support that.

**Response:** The U.S. Department of Energy (DOE) thanks you for your attendance at the public meeting and your participation in the public comment process. DOE has had multiple meetings and discussions with local stakeholders regarding its commitment to using the existing landfills and plume soils inside Perimeter Road as the source of fill for the On-Site Disposal Cell. It is important to understand that the Ohio Environmental Protection Agency (Ohio EPA) has selected final remedies on all of the landfills and on most of the plumes that are protective of human health and the environment. Ohio EPA will also select a final remedy on any remaining plumes, regardless if the plume soils are used as fill, to ensure protectiveness.

Due to the regulatory situation, DOE cannot make a commitment in the Record of Decision (ROD) to excavate the plumes, but it remains DOE's intent to use contaminated plume soils as fill. DOE also needs to maintain the flexibility to use alternate sources of fill should conditions arise during implementation that diminish the efficiency, safety, or protection of the environment along with no longer being in the best interest of the project. The level of commitment presented in the Proposed Plan is consistent with that used in the ROD.

2.30 Comments from Geoffrey Sea.

(Comments from Geoffrey Sea on the Waste Disposition decision were submitted once during the public meeting and once in writing. Both are included here but only one response is offered as the contents of the two comments are similar.)

My name is Geoffrey Sea. I'm here representing the Ohio Environmental Council, which is the largest environmental group in Ohio, with over 3,000 members, as well as the new incarnation of the watchdog local group over the plant site, which we are naming tonight, in launching, called Don't Dump on Piketon.

Don't Dump on Piketon is the heir to the petition drive in 2006/2007 that collected over 5,000 signatures from the area residents opposing use from this site for radioactive waste disposal or storage. And the petition drive that collected over 100 signatures, mainly from fence-line neighbors, in specific opposition to an on-site waste disposal cell just in the past few years.

Tonight I'm going to focus on our process comments, with substantive comments to follow in writing. We – I'm speaking for OEC and Don't Dump on Piketon. We strongly protest the process which we believe violates the CERCLA requirements for community input into these decisions that have been premade.

Specifically, we object to this meeting being the sole public meeting. It was, No. 1, intentionally planned – the whole process was intentionally planned over the major holidays.

This meeting was held before the public has had a chance to review the documentation.

Insufficient notice was given of this meeting.

Four, the atrocious weather conditions. The news has been broadcasting tonight as the Extreme Polar Vortex. Catastrophe was going to strike the area, and you folks should have cancelled or postponed this meeting. The fact that you didn't do that is just one example of how this entire process has been rigged to ramrod through this on-site waste cell.

And, finally, that you are illegally consolidating two decisions that were promised to be made separately, in sequence, and logically need to be made separately, in sequence, to make any sense and for the public to have meaningful input. You are combining them to one decision, which removes the ability to separately decide these important separate stages.

To remedy these problems, we want, No. 1, an additional 60-day comment period. There are two major important decisions here to be made. Each decision requires 60 days of consideration and comment under CERCLA. So we want 120 days, total.

Okay. We want clear separation of the building – of the process building and waste disposition decisions. We want meetings with DOE and Fluor with excluded stakeholder groups, including fence-line neighbors, public interest groups and Native American tribes. We want more public meetings near the end of the public comment period, and we want DOE funding for community groups through tag grants, to review and provide input on these – this major decision.

I have a written letter from the OEC legal department, stating their strong objections to the process.

[Text of the letter from the OEC legal department follows:]

ATTN: Ms. Kristi Wiehle

RE: November 17, 2014 Public Hearing on Portsmouth Process Buildings and Complex Facilities D&D Project; Portsmouth Site-Wide Waste Disposition Evaluation Project

The Ohio Environmental Council (OEC) strongly objects to the public participation process announced by the US Department of Energy for the Portsmouth Gaseous Diffusion Plant. The process as announced by DOE provides grossly insufficient opportunity for meaningful public review and public comment.

Tonight's hearing will occur during adverse weather conditions in which several school closings have been announced in the region. In addition, DOE is proposing to condense the comment and hearing process for two distinct projects involving the Portsmouth Gaseous Diffusion Plant into a single hearing and comment period. The substantive implications of DOE's proposals are of the utmost interest to OEC members in the region and throughout the state.

Given the foregoing, and on behalf of our thousands of members throughout the state, OEC requests that DOE extend the public comment period by an additional 60 days and afford an additional public hearing to be held close-in-time to the close of formal comment.

Sincerely,

[unsigned]

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Comment from Geoffrey Sea and M. Jane Murray

*MOUND ZERO*

Community Opposition to Destruction of a Prehistoric Native American Site by Construction of a Radioactive Waste Burial Mound in Sargents Station, Ohio.

Comments submitted UNDER PROTEST by Geoffrey Sea and M. Jane Murray Of Neighbors for an Ohio Valley Alternative

In response to the Department of Energy's Proposed Plan for the Site-Wide Waste Disposition Evaluation Project

Geoffrey Sea is a writer and historian with an A.B. degree in History and Science from Harvard University; he owns the Barnes Home historic property adjacent to the DOE reservation, formerly worked for the Oil, Chemical and Atomic Workers International Union at Piketon, and has written extensively about the atomic reservation at Piketon.

M. Jane Murray holds a B.A. and M.A. in sociology, served as Mayor of Portsmouth, Ohio, in 2010, served as Deputy Director of Research for the Kentucky General Assembly, and has served as a cultural resources consultant.

Both Geoffrey Sea and M. Jane Murray are associated with Neighbors for an Ohio Valley Alternative and have been admitted as consulting parties to the Department of Energy under the National Historic Preservation Act.

In a document dated October 7, 2014, the US Department of Energy (DOE) proposes to construct an approximately 100-acre permanent radioactive waste mound at the so-called "atomic reservation" near Piketon, Ohio. We contest that proposal in alliance with the vast majority of the southern Ohio community, and we propose an alternative to that action that would save money, expedite cleanup, comply with applicable laws, and result in a better more sustainable site.

\*We PROTEST the decision process and the public comment process associated with it as illegal and unethical. It is the result of a corrupt arrangement of individuals, companies, and government officials that has the aim of intentionally contaminating the Piketon site with a permanent radioactive waste dump, in order to make that site unavailable to civilian non-nuclear use.

We contend that the Department of Energy is not capable legally of making the two conjoined decisions that it proposes to make; that is the decision 1) to demolish all existing facilities on the gaseous diffusion plant (GDP) site and replace them with a flat, empty, "industrial" lot, and 2) to permanently dispose of most of the debris of that demolition in an on-site disposal cell (OSDC) on a portion of the DOE reservation that is currently woodlands.

We also contend that DOE has intentionally structured and manipulated the decision-making process for these two proposed actions so as to exclude meaningful public notification and comment and confine meaningful input to parties in collusion with the DOE Portsmouth-Paducah Projects Office in Lexington and its contractors. The actions were conflated together by surprise, formerly discussed alternatives were eliminated without explanation, community groups were denied information and meetings with DOE, no community groups were supported to monitor or



provide technical input for the decisions, and the process was intentionally complexified so as to make it unintelligible to members of the community in southern Ohio. Consulting parties for National Historic Preservation Act compliance were not notified of this decision-making process, no meetings of consulting parties were held, fence-line neighbors of the DOE reservation were not granted a meeting despite former assurances that such would be done, and whistleblowers were ignored.

The authors of these comments, Geoffrey Sea and M. Jane Murray, have been requesting a meeting with DOE site manager Vince Adams for four years continuously to express grave concerns, and we have been denied such a meeting, sometimes with subterfuge. (Mr. Adams has claimed that he did not receive a request for such a meeting from Fluor-B&W, but the representative for FB&W charged as our contact has relayed the request to Mr. Adams in front of our faces, and Mr. Adams refused to agree to a meeting even then.)

Two petitions opposing radioactive waste storage and disposal at the site have been circulated in the community – one in 2006-7 and one in 2010-11. The first collected over 5000 area signatures and was presented to DOE twice eliciting no response or acknowledgement either time from DOE. The second petition included over 100 signatures mostly of fence-line neighbors. The only response to the second petition from Fluor-B&W personnel was to claim that because it opposed a “waste dump” at Piketon, it did not apply to any DOE action since no “waste dump” was proposed, even though DOE now does propose an on-site waste dump and the petition was drafted with intended reference to the on-site waste cell now proposed. We submit that all of these more than 5100 names be counted as community residents opposed to the proposed on-site waste cell. Many more community residents stand in opposition, but DOE has intentionally blockaded their voices. Local store-owners who circulated both petitions at their establishments were harassed and intimidated and told to remove the petitions, we believe by contractor employees from the site.

The sole public meeting to receive public comments was held only one week after the opening of the public comment period, before the public even had time to receive news that there were decisions pending. That meeting was held on the night of the worst weather of 2014, a night when the polar vortex was forecast to strike. All schools in the four counties most effected – Pike, Scioto, Ross, and Jackson – were closed both the day of and the day after the meeting. Though the terrible weather was forecast days in advance, the DOE meeting was not cancelled or postponed, almost no community people attended, and the room was intentionally packed with DOE and contractor personnel in order to make it appear as if there was a crowd. DOE personnel in charge of the meeting were too embarrassed to even explain why the meeting had not been postponed.

The deadline for comments, as far as we know, has remained March 11, even though the winter storm Thor hit south-central Ohio on March 4, plunging temperatures to below zero, and knocking out power to large areas of Pike, Scioto, Jackson, and Adams counties, including the immediate residential area around the plant site. Some homes in the area remained without power as of March 11.

We formally requested a second public meeting for comments on the proposed actions and that has not been granted.

We do propose an alternative process for making legal decisions about site disposition, and alternative actions to those proposed by DOE.

Here, we outline:

- I. Why the Department of Energy is legally barred from making this decision at this time;
  - II. Why the proposed action would be the wrong action in terms of federal and state laws, cost, sustainability, National Historic Preservation Act compliance, and community support;
  - III. What DOE needs to do to comply with federal law and gain community support;
  - IV. How an alternative to the proposed action can better meet the aims of the cleanup.
- I. Why the Department of Energy is legally barred from making this decision at this time:
    - A. Conflation of the two different action decisions predetermines the outcome of both decisions, eliminates consideration of alternatives, and removes opportunities for effective community input.

For years following its assumption of the Piketon cleanup contract, Fluor-B&W, along with DOE, informed stakeholders and the public to expect two decisions in sequence: First, whether or not to demolish the process buildings (the PB decision), and second – after the first decision had been made – what to do with the waste that would result if demolition was required (the waste disposition or WD decision [sic]. This order of operations made sense logically and legally, because we cannot proceed to make an informed WD decision until we know how much waste will be generated, and we won't know the amount of waste generated until we decide whether the process buildings will be torn down.

The PB decision is not as simple as it seems. It is not just a question of the three main process buildings but also of all the subsidiary structures and infrastructure at the site, including questions such as whether to tear up roads and concrete foundations, and the general condition for leaving the site. Future use of the central portion of the site is also folded into the demolition decision, because there is a big difference between tearing down the buildings to leave a flat empty lot (as is proposed), and removing structures in a way to allow restoration of the sites topography prior to GDP construction in 1952. It is also possible, and desirable, to tear down the process buildings in such a way as to leave some non-contaminated waste “disposed” of in that process, as fill or in architectural mounds. Only after these complex decisions are made could we then proceed to decide how much other waste needs to be disposed, and where.

In the early years of GDP cleanup, we actively proposed filling one or two of the process buildings with soil, and then mounding it over, in order to avoid a separate OSDC. We do not believe that this option was adequately investigated, as to properly consider it would require making the PB decision first, but leaving the WD decision for later.

By surprise, only in 2014, Fluor-B&W and DOE announced that they would conflate the two decisions and make them simultaneously, though retain separate processes for each decision. We contend that the intention of this conflation was to confuse the public and

eliminate the consideration of viable alternatives. Not only has the presentation of these two separate but simultaneous decisions been confusing, but the explanation given undermines the legality of the conflation. It has been said repeatedly at meetings of the SSAB and its subcommittees that the reason for the conflation was that since “there is no alternative” to process building demolition, DOE “might as well” make the waste disposition decision at the same time, in order to speed up the schedule, and since the decision for demolition “predetermines” the need for an on-site waste cell.

This is an admission that the law is being scuttled, since CERCLA and the various statutes it subsumes – NEPA, NHPA, etc. – all REQUIRE the vibrant consideration of alternatives, with community input and community support demonstrated for the chosen options. But the conflation of decisions eliminates the possibility of considering alternatives, as the following exercise shows:

Suppose that the “do nothing” alternative for the process building decision wins over the teardown action, a possibility that the federal laws require be considered seriously. This is not as far-fetched as it seems since funding for the entire project is in question (as elaborated below), and there may not be the money to proceed with the demolition.

But wait, the “do nothing” option can’t win, because simultaneously a decision is being made to put the demolition debris into a gigantic and very costly waste cell. Without the demolition, there wouldn’t be the waste to put into a waste cell. So making the waste disposition decision now eliminates any actual decision about demolition. The buildings MUST be demolished the way DOE has rigged the process. DOE’s pretense that it has yet to make a decision about demolition is pure play-acting: that decision has already been made; it had to be made or the waste cell would not have been proposed.

Conversely, Fluor-B&W and DOE have repeatedly said that they want the waste cell ready to begin accepting waste from the demolition even before the demolition occurs, just to handle process equipment coming out of the buildings and prevent a build-up of materials on the site. Presumably it would be unacceptable to empty the buildings and then demolish them before the emptied equipment has all been removed from the site to some waste repository.

In other words, the waste disposition decision has ALSO already been made, as is even more clear from Fluor-B&W’s extensive work at the selected waste cell site, allegedly before any decision has been made. The “do nothing” option for this decision is also a fiction, because the parties have already acknowledged that they CAN’T let waste accumulate at the site with no place to put it, since the process buildings are already being emptied under the existing contract for work.

Thus, both of the supposed “decisions” are predetermined legal fictions. But that violates the controlling statutes which REQUIRE that alternatives be seriously considered – and not just the “no action” alternative.

- B. DOE has illegally removed viable and better action alternatives from its decision documents, even though those alternatives were proposed. In fact, DOE conflated the two decisions for the express purpose of eliminating consideration of alternatives. Specifically, DOE has failed to consider the lower costs

- C. DOE has not met the community involvement requirements of CERCLA and has not provided TAG grants to community organizations as it has at every other major cleanup site except Paducah.
- D. DOE has illegally eliminated the consultation requirements of the National Historic Preservation Act and has failed to even notify NHPA consulting parties that its consultations were terminated.
- E. The proposed site for an on-site waste cell has a prehistoric Native American archaeological site in its midst, worthy of listing on the National Register of Historic Places. DOE has not devised any acceptable way to mitigate the potential adverse impacts of an OSDC on this site.
- F. DOE has illegally and fraudulently supported USEC Inc., the now bankrupt uranium enrichment company (which has emerged out of bankruptcy under the name Centrus Energy) only so that the fictional “American Centrifuge Project” could continue on paper. The fraudulent idea that the ACP project will be operating on the site – contraindicated by every professional analysis including two by the DOE loan guarantee office – has been used to justify the siting of an on-site waste disposal cell, on the argument that the site will be “nuclear” anyway. In other words, if ACP were acknowledged to be a bust as it ought to be, then DOE could not justify a decision to contaminate an otherwise non-nuclear site with a new thousand-year on-site waste disposal cell.
- G. M. Jane Murray learned of the fraudulent nature of ACP personally in January of 2010, when she visited the site as mayor of Portsmouth. Mayor Murray insisted on visiting the ACP site, which was then supposed to be in full commercial operation, according to “binding” agreements between USEC and DOE. But in 2010 the buildings remained almost entirely empty. Mayor Murray asked how many centrifuges were then in operation at the site. Her tour guides were reluctant answer [sic] but were finally forced to admit that only 36 centrifuges were then in operation, nine years after start of the project. At that moment, Iran was spinning over 20,000 centrifuges, though Iran started its centrifuge program after USEC. Despite USEC’s obvious collapse which ended in its bankruptcy, signs at the site still announce the American Centrifuge Plant as a going concern, fooling area residents into thinking that the site is still a viable nuclear operation. This bears on the waste disposal decision a number of ways, including the idea intentionally spread by site contractors that since the site is hopelessly contaminated anyway, the additional radwaste cell will “do no harm.”
- H. In 2009, Geoffrey Sea met with Dennis Carr of Fluor-B&W at Sea’s request. Carr is now the FB&W project manager but was then in charge of planning waste disposition. In that meeting, Carr said that “confidentially” he believed that USEC’s ACP would never operate and that he was planning an on-site waste cell large enough to accommodate the refuse not only from demolition of the GDP but also from demolition of USEC’s ACP buildings, which would need to be torn down as soon as ACP was acknowledged to be kaput. By 2011, however, FB&W had changed its tune publicly after it was realized that community opposition to a waste cell was intense. In that year Mr. Chu [sic] of FB&W made a presentation to the SSAB at which he stated on the record that USEC’s ACP was a factor in the siting of the OSDC, namely that since the ACP was located at the southwest corner of the DOE reservation, siting of a waste cell at the northeast corner of the reservation would minimally impact USEC’s personnel. In other words, FB&W set about to contaminate

opposite ends of the reservation in supposed consideration of a project they knew to be nonviable, and which they already planned to demolish. The total evaporation of the ACP project necessitates a total rethinking of the waste cell, since the entire site can now be preserved for non-nuclear use and since there is no logic in contaminating a part of the site that is far away from ACP.

- I. DOE and Fluor-B&W have long histories of undisclosed corruption and security breaches at the Piketon site that make both parties untrustworthy to site and operate an OSDC. Piketon is the site of some of the worst health and safety violations in DOE complex history, including the massive burial of parts of the INCO Nickel Plant from Huntington, West Virginia, on the Piketon site. (See the 1980 film *For My Working Life* about the health and safety problems at Piketon, for which Geoffrey Sea served as a consultant.) Piketon was indeed the site of the grossest security violation in DOE complex history, the theft by a foreign country of at least one train-car-load of Highly Enriched Uranium en route from Piketon to Apollo, Pennsylvania, in the 1960s. (It is known as the Apollo Affair but the uranium never left Pike County, Ohio, before it was stolen.) In the 1980s at least two employees were caught stealing radioactive metals from the plant and selling the metal locally, but the cases were never made public. In the 1990s, DOE at Piketon was caught in a massive scheme to alter and destroy worker dosimetry records. Also in the 1990s, Bechtel-Jacobs Corporation was caught intentionally packaging clean items as radwaste in order to collect higher fees for waste disposal. In the year 2000, about five acres of federal land at Piketon was literally stolen from the federal government and transferred illegally to the trustees of Scioto Township, as a payoff by a corrupt DOE official from Oak Ridge. (Deeds of transfer and names available.) This land was never returned to the federal government, even though plant DOE officials know about the illegal transfer. Certainly, the same officials responsible for stealing federal land cannot be trusted to steward the construction and operation of an on-site radioactive waste dump. In 2007, a radium calibration source was stolen from a vault at Piketon and no report on the theft was ever issued. In 2008, when the Piketon cleanup contract was up for bids, Geoffrey Sea received a phone call from one of the bidding companies, claiming that PPPO manager William Murphie had “fixed” the process for Fluor-B&W to win it – before the award to Fluor-B&W was announced. In 2013, Fluor-B&W and USEC were caught illegally shipping contaminated converters from Piketon to Paducah for storage in that GDP before it closed, in order to reduce the radwaste burden at Piketon. Since the scheme was revealed in part by dosimetry personnel at Piketon, Fluor fired its entire radiation dosimetry staff, apparently in order to remove the unknown whistleblower. Fluor-B&W then concocted a story for the press about how its radiation records were “altered” with no explanation for how or why that would have been done. This incident eliminates any basis for the community placing trust in either Fluor B&W or DOE. Simply put, no decision on the proposals prepared jointly by Fluor-B&W and PPPO can be legally acted upon by DOE until the full history of corruption and illegality at Piketon is investigated and guilty parties prosecuted.
- J. Fluor-B&W became the favorite of PPPO precisely because the company had successfully planned and built an enormous unsightly on-site waste storage facility at Fernald. In other words, the present “decision” was structured into the award of the initial contract to Fluor, and that contract was written in such a way as to give extra fees to FB&W for successful sighting of an OSDC at Piketon. In other words, there is no present “decision” being made – that decision was already made and was fraught [sic] with corruption involving PPPO and FB&W personnel. If the government selects a contractor to accomplish a specific action and

- contracts to pay that contractor to accomplish that action, it cannot later claim that it is making an honest policy decision in accordance with the law. In reality, the entire decision making process is unlawful.
- II. Why the proposed action would be the wrong action in terms of federal and state laws, cost, sustainability, National Historic Preservation Act compliance, and community support;
  - III. What DOE needs to do to comply with federal law and gain community support;
    - A. Separate the proposed actions to make the Process Building demolition decision now, and postpone the waste disposition decision until after the Record of Decision on process building demolition. This will allow required consideration of alternatives in both phases of the decision-making.
    - B. Initiate a Disclosure Project for acknowledging to the community the long history of deception, corruption, and injury at Piketon, in preparation for genuine community involvement in decision-making.
    - C. Publicly terminate the ACP project and make a first decision about the status of the ACP buildings.
    - D. Investigation and prosecution of the corruption scandals at Piketon.
    - E. Replacement of Fluor-B&W with a contractor meriting trust that does not have a financial incentive for on-site waste disposal.
    - F. Creation of a non-profit corporation without the involvement of site contractors that can make impartial community-based decisions about future site use and that can monitor the actions of DOE and site contractors. (This would replace SODI which is tainted by contractor influence.)
  - IV. How an alternative to the proposed action can better meet the aims of the cleanup.
- We propose three specific alternatives to an on-site waste cell:
- A. Ship all the waste off-site as in DOE's alternative B, but use the West Texas Radioactive Waste Facility instead of the facilities in Nevada and Utah, at much lower disposal and transportation cost than what was calculated in the decision document.
  - B. Locate a site within the Ohio Valley, possibly in a limestone quarry, where the lower-level radwaste from both Piketon and Paducah can be disposed at great cost savings.

- C. Separate the waste stream that is proposed for the on-site disposal cell into two streams; material that requires radioactive waste disposal off-site either in Texas or a site found within the Ohio Valley, and a larger stream of “clean” material that can be used on-site for architectural aesthetic construction such as topographic restoration.

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**Response:** The U.S. Department of Energy (DOE) thanks you for your participation in the public comment process. DOE is responding to those aspects of the comment related to the contents and supporting information for the Waste Disposition proposed remedy and the decision process. The commenters’ other claims are unrelated to the information offered by DOE for public comment. The aspects of the comment relevant to the Waste Disposition decision are: (1) the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA) public involvement process, (2) the other alternatives offered in the comment, (3) the combination of the two decisions, (4) the role of the American Centrifuge Plant (ACP) in the alternative evaluation, and (5) National Historic Preservation Act of 1966 (NHPA).

It should be noted that all aspects of DOE’s decision process have been conducted in accordance with its legal, statutory, and regulatory requirements.

**Public Involvement Process.** DOE has complied with, and in some cases exceeded, all requirements and guidance regarding public notification of the Proposed Plans, distribution of the Proposed Plans, timing and conduct of the public meeting, and submittal of comments. Despite the weather the night of the meeting, it was well-attended, including one of the commenters. Of the 135 people who signed in at the meeting (not everyone signed in), less than 20 were in attendance from Fluor-B&W Portsmouth LLC, DOE, or the regulatory agencies in support of the meeting. Other site employees who may have attended the meeting did so on the basis of a personal decision and as a stakeholder. Twenty-nine community members provided comments on either decision at the meeting, either during the meeting to the audience or directly to the court reporter. The decision offered for public comment was not pre-made, and all comments received were considered in selecting the final remedy. DOE is responding to specific topics raised in relation to DOE’s public comment process.

1. **Public notifications.** The National Oil and Hazardous Substances Pollution Contingency Plan (40 *Code of Federal Register* 300), more commonly called the National Contingency Plan or NCP, is the federal government's plan for responding to both oil spills and releases of hazardous substances (including radioactive materials). As required by the *The April 13, 2010 Director’s Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action, including the July 16, 2012 Modification thereto* between the Ohio Environmental Protection Agency (Ohio EPA) and DOE, DOE is to follow NCP requirements in making building/structure and waste management decisions at the Portsmouth Gaseous Diffusion Plant (PORTS). The NCP requires DOE to publish a notice of availability and brief summary of the Proposed Plan in a major local

newspaper of general circulation. U.S. Environmental Protection Agency (U.S. EPA) guidance developed to provide direction for groups remediating sites under the NCP states that “the announcement of the availability of the Proposed Plan and [Administrative Record] AR File should be made at least two weeks prior to the beginning of the public comment period so that the public has sufficient time to obtain and read the Proposed Plan.” DOE followed this guidance and issued public notice of the Proposed Plan on October 29, 2014. The comment period opened 2 weeks later on November 12, 2014.

Guidance provided by U.S. EPA was followed in notifying the public about the Proposed Plans and public meeting. In addition to the newspaper notices placed 2.5 weeks before the public meeting, DOE advertised the public comment period, availability of the Proposed Plans, and the time and date of the meeting on local radio stations in the Pike, Scioto, Ross, and Jackson county region the week before the public meeting. Over 500 fact sheets were sent to the PORTS stakeholder mailing list, which includes fence-line neighbors, Native American Tribal Nations, and interested members of the public, providing notification of the public comment period, availability of the plans, and time and date of the public meeting. DOE also placed copies of the Proposed Plans in four local county libraries, the DOE Environmental Information Center, and on the DOE and contractor Internet websites.

2. **Duration of the public comment period.** The NCP requires offering a 30-day public comment period. Because the public comment period was scheduled to occur during the holidays, DOE offered an extended comment period of 60 days, starting on November 12, 2014, and ending on January 11, 2015. As requested by the commenter, DOE extended the public comment period an additional 60 days to March 11, 2015, making the total comment period duration 120 days.
3. **Public Meeting.** The meeting was held early in the comment period to provide the public information that may have been helpful to them while reviewing the documents and to answer any questions they may have had. It was decided to provide an opportunity to receive public comments at the meeting in the event that members of the public had an opinion during the early phase of the review period. The format of the public meeting provided two distinct opportunities for public comment, one for the Process Buildings decision and one for the Waste Disposition decision.

There were many avenues including the public meeting to obtain additional information about the Proposed Plans. The Proposed Plans provided stakeholders with points of contact at both DOE and Ohio EPA for further information, along with a toll-free line available 24 hours a day, 7 days a week, to receive stakeholder inquiries. Additionally, there were many ways to submit comments to the proposed remedies including the public meeting. As discussed at the meeting and in the Proposed Plans, comments could be submitted to DOE by email, by postal mail, or by fax.

4. **Technical Assistance Grants.** Technical Assistance Grants are part of a U.S. EPA program that are only available at Superfund sites that are on the U.S. EPA's National Priorities List (NPL) or are proposed for listing on the NPL, and for which a response action has begun. PORTS is not an NPL site, nor is it proposed for listing on the NPL.



5. **Consideration of petitions.** There is nothing to indicate that the historic petitions referenced apply to the current situation as they were not rendered in response to the Waste Disposition Proposed Plan. Subsequent to these petitions, DOE has discovered an excellent site with protective geologic conditions and has completed a thorough evaluation of both on-Site and off-Site disposal. As part of the CERCLA process, the Proposed Plan was presented to the public for comment, with over 500 comments received.

**Other Alternatives Suggested.** The comment contends that viable alternatives were not evaluated and offered for public comment. Additional waste disposal options identified in the comment are addressed below. The comment does not present any new information or viable new alternatives that would change the evaluation that formed the basis for the decision.

1. **Ship Waste to West Texas.** The West Texas Radioactive Waste site has several different cells. Not all cells can accept federal waste. The cell that can accept waste from DOE facilities is a much smaller facility than that at Energy Solutions. Alternative 3 costs and transportation risk calculations would have had to consider the need to send waste to several disposal locations if the West Texas facility was part of the alternative. Nevertheless, other off-Site disposal facilities are an option that can be considered during design. However, consideration of any of these viable off-Site disposal facilities during the alternative evaluation would not have improved the evaluation results for Alternative 3.
2. **Locate a Site Within the Ohio Valley.** Siting a new DOE disposal facility off the Site was evaluated as a process option in the Remedial Investigation/Feasibility Study (RI/FS). This evaluation can be found in Section 7 of the RI/FS. The specific suggestion to construct a new disposal facility in a limestone quarry was also evaluated by DOE in a separate technical paper that can be found in the Administrative Record File. This specific approach did not meet many state and federal laws and could not be developed into a full alternative for consideration and for those reasons was eliminated.
3. **Leave Clean Waste On Site as Contour Fill.** This option is a less desirable variation on Alternative 3. In Alternative 3, the waste streams are already segregated with the clean waste streams assumed to be disposed locally at a construction and debris landfill. Very little of that clean waste expected to be generated can be legally be classified as “clean hard fill” that could be used as contour fill. Mainly, only concrete can be crushed and placed as fill with no long-term maintenance or monitoring required. All other “clean” waste generated is considered solid waste by the State of Ohio and the disposal of such waste must occur in a managed landfill. If left on the Site, new solid waste landfills would have to be built in compliance with all Ohio EPA regulations. This suggested option would add solid waste landfills to PORTS in the main plant area, which would render the entire alternative even more expensive than the current Alternative 3.

**Combination of two decisions.** The purpose of the Proposed Plan is to facilitate public involvement in the remedy selection process. There is no requirement in the NCP or any other regulation that one Proposed Plan be offered for public comment before a related Proposed Plan is offered for public comment. Because the decisions are closely linked, and

for the convenience of the public, the public review and comment periods were scheduled in parallel. It was viewed to be more advantageous to the public to consider both Proposed Plans at the same time.

The comment indicates that waste disposition alternatives cannot be properly evaluated until the decision is made to demolish the process facilities and the volume of waste to be generated is known. The comment suggests that the No Action alternative for buildings or the option to dispose clean material as fill or architectural mounds as options would change the waste disposition evaluation. The No Action alternative for buildings cannot be selected because it is not protective of human health and the environment and therefore does not comply with federal and state law. The other options suggested have been shown to not be viable. Therefore, because there is only one viable decontamination & decommissioning alternative, there is no need to wait until the Process Buildings decision is officially made before waste disposition alternatives are evaluated and one selected.

**Effect of the American Centrifuge Plant on the decision.** As stated in the Proposed Plan, the analysis and evaluation of disposal alternatives was done considering the waste generated only from the cleanup of the gaseous diffusion plant. The location for the On-Site Disposal Cell (OSDC) is selected because this location provides one of the best geological sites in Ohio for an OSDC. The presence of the ACP had no effect on the siting decision.

**NHPA.** DOE has actively engaged with members of the public throughout the CERCLA process, including on the historic preservation aspects of the project. The NHPA regulations are identified as an applicable or relevant and appropriate requirement for this decision. DOE has worked with the State Historic Preservation Office (SHPO), the Advisory Council on Historic Preservation, the Native American Tribal Nations who have expressed an interest in the clean-up work at PORTS, and interested members of the public to keep them up to date on planned activities at PORTS and provide them with the opportunity to provide input to DOE. In all cases, DOE has sought and considered the views of the public on proposed historic preservation activities at PORTS. There have been meetings and presentations on the results of architectural and archaeological surveys, on proposed historic preservation mitigation measures at PORTS and requests for input on other mitigation measures that may be appropriate. The Proposed Plan presented an additional opportunity to seek and consider input.

DOE, with input from cultural resource professionals, has carefully developed, and in certain instances initiated, the implementation of comprehensive and robust mitigation measures that address the adverse effects to historic properties affected by the proposed CERCLA actions. DOE will move forward with the Phase III data recovery for the archaeological site that will be impacted by construction of the OSDC using a data recovery approach prepared in accordance with SHPO guidance. DOE will continue to protect the remaining National Register-eligible archaeological site identified in this area.

2.31 Comment from Sharon Manson.

Thank you for having this meeting this evening to help clarify some of the questions that the public has had. We appreciate you doing that.

I'm going to comment on Recommendation 13-04, written July 11th, 2013. First of all, the background for this recommendation, it has been 60 years since the construction of the Portsmouth Gaseous Diffusion Plant. And a greenbelt was left, whether that was done on purpose or not, that encompasses nearly the whole reservation. And throughout those years, a rich mosaic of habitats have been developed. That was done, and we checked on all this information from Ohio University, who gave us the study and did the study resulting in a map for that.

Many of these habitats are critical to the flora and fauna found in them. Most notably are the old trees, the 200-year-old trees that grow there in the hardwood forest.

So the Portsmouth SSAB believes it's important to the community, and beneficial to maintain such habitat areas as green space and potential conservation areas.

Our recommendation is that DOE fund a land use plan for the entire reservation. That was done for the Miamisburg Mound Complex, resulting in a variety of reuse opportunities. It's important to establish clear goals for the reuse, while providing critical habitats for the plants and animals. This would also include economic development. We request that this plan incorporate green space and potential conservation areas.

We also believe such a plan will benefit the community and DOE. By establishing clear goals now, costly future changes to the infrastructure may be avoided and the site may be left in a more attractive state for prospective tenants and to develop more economic development. Thanks for what you do.

**Response:** The U.S. Department of Energy (DOE) thanks you for your attendance at the public meeting and your participation in the public comment process. DOE's prime contract for decontamination and decommissioning (D&D) of the Portsmouth Gaseous Diffusion Plant (PORTS) requires the contractor to ensure that priorities associated with future beneficial land use are considered in the prioritization, planning, and execution of the D&D project within the funding constraints. At PORTS, information collected from a survey conducted by Ohio University was used to conclude that industrial reuse is the most likely future land use. That conclusion was used in determining the potential for future risk from residual contamination, as well as determining the type of remediation most appropriate.

2.32 Comment from David M. Manuta.

Dear Ms. Wiehle,

I write to you as a former Research Staff Member II (de facto chief scientist) at PORTS.

On the subject proposed plan for the Site-wide Waste Disposition, my education/experience indicates that Alternatives II and III are about the same.

There are significant risks associated with both Alternatives II and III that (in my considered opinion) were not adequately fleshed out in this proposed plan.

Alternative II calls for the use of an On-Site Disposal Cell (OSDC). My key objection to Alternative II is that there was no text presented (so far as I can tell) in the proposed plan to

indicate that this alternative had been previously successfully deployed at a domestic gaseous diffusion plant. I am not aware that when uranium enrichment activities ceased at Oak Ridge's K-25 Plant [now the East Tennessee Technology Park (ETTP)] that a waste cell of this type was utilized. Please correct me if I am incorrect.

While the OSDC is touted for a 1,000 year life cycle, the half-lives for some of the prospective radioactive isotopes can last for eons longer (e.g., millions of years). Since I was not privy to the discussion on how the longed-lived radioactive isotopes are to be contained, this is a most serious question.

It is also unclear from the text whether the presumed hazardous material brought into the OSDC will simply be stored or if some (presumed chemical) treatment is proposed. Long-term storage of hazardous materials may be problematic (for a variety of reasons). Moreover, a testing facility is necessary to assess the effectiveness of this presumed chemical treatment. If prospectively hazardous material can be converted into more benign (read safer) material, then there may be value-added to this alternative. The text in this proposed plan does not (to the best of my understanding) address this seemingly important issue.

It would be helpful to define:

1. The acceptance criteria for hazardous material placed in the OSDC. Once these criteria are established, they must be iron-clad.
2. If treatment is proposed in the OSDC, the relative human health hazards associated with the starting materials and the expected end products are essential for all workers to know.
3. There was discussion in the proposed plan for five-year evaluations of the OSDC performance. This evaluation frequency appears (to me) to be in the absence of credible/reliable data regarding the use of an OSDC in the uranium enrichment by gaseous diffusion environment. The evaluations (in my considered opinion) ought to be made on a more frequent basis (e.g., in the beginning, every six months) in order to mitigate potential problems earlier in the cycle. Once it is clear that longer intervals are prudent, then these evaluations can be performed on a less frequent basis.
4. Trichloroethylene (TCE) was cited as the only Principal Hazardous Constituent (PHC). TCE was an effective degreaser for various types of parts over much of the lifetime at PORTS. Since TCE is a dense fluid (about twice as dense as water), it will migrate to greater depth in the ground/soil. Are we certain that there are no other solvents with unique properties (a la TCE) that ought to also be considered?

The apparent purpose of Alternative II is to obviate the shipping of all of the hazardous waste off-site (Alternative III).

An advantage of Alternative III is that (fundamentally) none of "the nasties" ought to remain on site at PORTS. The disadvantage of Alternative III is that when the shipment is in transit by rail or truck to "the grave" (presumed to be in Nevada and/or Utah), we must be as certain as possible that the composition of the waste is well-known/characterized. Furthermore, the driver of the truck/engineer on the train must be able to make immediate contact with the applicable regulators

in the event of a problem. A derailment and/or a spill in a major city are clearly undesired outcomes. Planning for these potential disasters is essential if Alternative III is chosen.

Many important acronyms were introduced in this proposed plan and the variety of compliance issues were well-articulated. Unfortunately, "the nuts and bolts" issues that I have described here were not well-developed (in my considered opinion) in the proposed plan.

While we cannot do nothing (Alternative I), much more technically oriented work is necessary to make a reasonable decision regarding Alternatives II and III.

We also must recognize that federal appropriations are likely to vary year over year, so any estimates out past three years may be inappropriate. Whether this project takes 12 years or longer to complete, the reality is that it must be done right. Our descendents [sic] will appreciate that we collectively took the time to do this right.

I would be delighted to speak with you and other key personnel at our mutual convenience regarding these comments.

**Response:** The U.S. Department of Energy (DOE) appreciates your participation in the public comment process. DOE is first responding to each of the number points and then to the other points made in the comments.

1. **Waste Acceptance Criteria (WAC).** Stringent controls will be put in place to assure that all waste disposed in the On-Site Disposal Cell (OSDC) meets the WAC. The Record of Decision (ROD) does require compliance with the WAC. The first paragraph of the selected remedy portion of the ROD states: "Wastes not meeting the OSDC WAC will be transported to off-Site disposal facilities or be treated on Site to attain the WAC for the on-Site or off-Site disposal facility." The WAC is presented in Section 12.2 of this ROD. Documents developed after the ROD will lay out the monitoring requirements and processes to control waste going to the OSDC to ensure that only wastes that complies with this WAC are disposed in the OSDC. In general, information known about each waste stream is evaluated by waste management experts and, with the Ohio Environmental Protection Agency review and concurrence, determined whether or not it can be disposed in the OSDC.
2. **Treatment in the OSDC.** Treatment is not being proposed in the OSDC; however, treatment elsewhere on the Site may be needed to meet the OSDC WAC and may be implemented. The Portsmouth Gaseous Diffusion Plant (PORTS) Health and Safety Program for workers ensures that they (the workers) are part of any planning process and that they are aware of all the potential risks. DOE agrees that understanding the waste characteristics before treatment and after treatment is critical to both ensuring that effective treatment is implemented and protecting the workers. The information concerning what the starting material conditions are and what is expected from a treatment process would be provided in a post-ROD design document, if treatment is determined to be necessary.
3. **Five-year reviews.** The law requires a submittal of a document evaluating the level of protectiveness of a completed remedy every 5 years if contaminated material remains on the Site. However, this 5-year review is based on much more frequent monitoring

results and DOE evaluates these results constantly, not just at the end of the 5-year period. Should results not be as expected, DOE would evaluate the impacts much sooner than at the 5-year time frame. DOE will begin monitoring the groundwater underneath the OSDC before the first waste is placed and will continue after closure. The details of the monitoring will be part of the documents developed after the ROD.

4. **Principal Hazardous Constituent.** The current data shows that trichloroethene is by far the contaminant that causes the most risk at the site, which is the criterion used to select principal hazardous constituents. However, please note that free liquids are forbidden to be placed in an OSDC. Any migration of contaminants through the waste as a result of rainwater is prevented from entering the environment by a liner and a leachate collection system. So, even if a small volume of solvent were inadvertently to be disposed, the migration of that solvent from the OSDC would be controlled. Furthermore, the underlying geology is so favorable that even if the liner and leachate collection system were to fail, no liquids could migrate through the underlying rock. A disposal cell at PORTS would be as protective to the underlying groundwater and adjacent populations as the disposal facilities out west.

There is more explanation of the risks and benefits of each alternative in the supporting Remedial Investigation/Feasibility Study. Consistent with U.S. Environmental Protection Agency guidance, the Proposed Plan is intended to be a summary of the key points for the public.

This response will now focus on responding to points made in the text. First, DOE has disposed of all wastes from the gaseous diffusion plant in Oak Ridge that met the WAC in an on-site disposal facility (called the Environmental Management Waste Management Facility). This facility began operation in 2002 and is still operating successfully.

Second, the selection of the 1,000-year time frame is not meant to imply that in year 1,001 the cell may fail. It is the representation of forever adopted by the scientific community and has been placed in DOE regulations. The commenter is correct; many of the isotopes have half lives of millions and even billions of years. These time frames are not feasible to contemplate, and yet DOE must do just that. The isotopes cannot be destroyed by any amount of treatment and so any cleanup solution must use a placeholder time frame to assess long-term effectiveness. DOE-Headquarters has selected 1,000 years; therefore, DOE-PORTS has also used this time frame as do the landfills that accept DOE waste out west. The OSDC followed the same requirements for long-term protection as adopted by the landfills considered for off-Site disposal and follows requirements to comply with Resource Conservation and Recovery Act of 1976, as amended; Toxic Substances Control Act of 1976; and Ohio solid waste regulations. As noted above, the geologic setting and the engineering design make the OSDC protective in the long-term.

Third, all wastes sent to the OSDC are either staged for a short-term or disposed. Treatment is not planned to occur at the OSDC. If treatment is needed to meet the OSDC WAC, it will be done before the waste is brought to the OSDC. The WAC has been set to be protective of human health and the environment. If treatment is used, it will be necessary to assess the effectiveness of the treatment technology as stated in the comment.

2.33 Comment from Lee Blackburn.

Sirs:

While I am in support of Alternative 2 of the Proposed Plan for the Site-wide Disposition Evaluation Project, I do have some significant concerns, specifically:

The Site Specific Advisory Board (SSAB) has been urging DOE for some years now to dig up the on site landfills and consolidate them into any proposed On Site Disposal Cell to further economic development on the site. DOE has reluctantly agreed to do this but only for the landfills within Perimeter Road. However, landfills within the Perimeter Road represent just 45% of total landfill acreage and totally ignore the highly contaminated X-734 sites.

X-734, along with X-734A and X-734B, cover approximately 17+ acres to the north of Perimeter Road. They are believed not to be lined and contain among other hazards; organic solvents, including known carcinogens (TCE, toluene, ketone, sodium hydroxide, ammonia hydroxide and PCBs), heavy metals (mercury and cadmium), empty drums that formerly contained hazardous metals and uranium-contaminated soils from the X-342 area.

DOE's Proposed Plan for the Site-wide Waste Disposition Evaluation Project is suppose [sic] to be protective of human health, safety and the environment but by leaving the unlined and toxic X-734 landfills untouched, the Plan not only risks human health, it will likely limit future economic development on the site.

Respectfully submitted by,  
Lee Blackburn  
Former Board member – SSAB

**Response:** The U.S. Department of Energy (DOE) thanks you for your participation in the public comment process. There are several major decisions that have been or will be made to develop the overall cleanup strategy for the Portsmouth Gaseous Diffusion Plant (PORTS). Between the years of 1992 and 2001, final decisions on all of the landfills at PORTS, including X-734, were made. The final decisions, as selected by the Ohio Environmental Protection Agency (Ohio EPA) and implemented by DOE, were to construct and maintain caps for all landfills and prevent future use of the landfills. These decisions were determined to be protective of human health and the environment and in compliance with U.S. Environmental Protection Agency and Ohio EPA regulations for the closure of landfills.

The Waste Disposition decision is not making a remediation decision for the landfills to ensure long-term protection of human health and the environment. Those decisions have already been made and implemented. The Waste Disposition decision is allowing DOE to pursue contaminated soil associated with landfills and contaminated groundwater inside Perimeter Road as a source of engineered fill for an on-Site disposal cell. The most valuable source of fill is the soil associated with contaminated groundwater plumes. The landfills inside Perimeter Road are located over or adjacent to this primary fill source and would have to be removed to access the fill. For this reason, the landfills inside Perimeter Road were evaluated as potential fill sources.

If landfills are not used as contaminated fill, the current final, protective remedies would remain in place and would be maintained for as long as the wastes in the landfills pose an environmental threat.

2.34 Comment from Brian Blair.

Ms. Wiehle:

Thank You for the opportunity to provide comments on the Proposed Plan for Site Wide Waste Disposition. As you know, I am very familiar with the Piketon Facility and related cleanup. I applaud USDOE, Ohio EPA, and USEPA in their efforts in addressing contaminated media at PORTS. These comments also address the Proposed Plan for D&D Evaluation inasmuch as the two plans are related. My comments for Site-Wide Waste Disposition are provided below:

1. Utilization of "CAMU" concept for Disposal Facility: The RCRA "Corrective Action Management Unit (CAMU)" rule is intended to allow for consolidation and management of hazardous wastes within a contaminated area. In simple terms, this rule allows for moving around contaminated media within the area that is impacted, in order to create a consolidated management or disposal unit. The placement of an on-site disposal cell in the far Northeast portion of the DOE reservation, which constitutes a currently "clean" area of the DOE Property, and the transport of contaminated materials, including hazardous wastes and media, a distance across the perimeter road to this unimpacted area constitutes the citing and placement of a new hazardous waste disposal area rather than a "CAMU" within an existing impacted area. Additionally, it is not appropriate to include the clean area in the NE portion of the facility as part of the "AOC" described in figure C-1, since that area is not currently identified as a contaminated area. If the site presented in the Proposed Plan is used for disposal of hazardous wastes and contaminated media, then "New Facility Standards" must be met, including RCRA regulatory land disposal restrictions and citing requirements. A "CAMU" would only be appropriate for consolidation of contaminated units within their combined boundaries, which generally coincide with an area inside the perimeter road, or at least within areas of existing contaminated soils and groundwater contaminant plumes.
2. Waste Acceptance Criteria (WAC) for On-Site Disposal: This commenter questions whether the WAC will provide for long-term protectiveness of groundwater resources. For example, a WAC of 5,000 parts per million of Trichloroethylene (TCE) in soil media would present undue risk to both the clay and synthetic liner of the unit, and resulting groundwater resources, as well as presenting unreasonable risk to workers handling the media. USEPA has developed a technology-based Land Disposal Criterion (LDR) of 6 parts per million of TCE in soil for disposal within a disposal facility that already meets strict RCRA standards. DOE provides no justification why a WAC that is almost a thousand times higher than this USEPA standard for a similar lined and engineered unit would be protective, when it is determined not to be protective at any other RCRA-regulated unit. For the relatively small quantity of highly contaminated soils that may be encountered for removal, soils well above the technology-based LDRs should be treated prior to disposal, for the same resource-protective and risk-based reason as LDRs were developed, regardless whether a "CAMU" regulatory exemption is sought or granted from a regulatory perspective. In summary, the WAC are orders of magnitude above the risk-based criteria developed for similar facilities, and should be revised to be consistent with risk-based and technology-based contamination levels appropriate for burial.



3. WAC conformance with CAMU rule: If wastes disposed in the disposal cell are not required to meet RCRA LDRs, (which commenter maintains otherwise), then the requirements of OAC 3745-57-72, Corrective Action Management Units (CAMUs), and equivalent Federal rules must be met. This includes treatment standards for wastes placed in CAMUs per section (E)(4)(d) of this rule, including the ninety percent reduction treatment standard for non-metals. The WAC should demonstrate conformance with this treatment standard, which is readily achievable with current technology. There is no justifiable need to waive these criteria.
3. [sic] Mitigation of impacted resources for the OSDF: The Proposed Plan calls for elimination of a significant amount of natural habitat in a "clean" portion of the reservation in order to construct the OSDF, related support facilities, and infrastructure. Such impacts would be avoided if the disposal unit remained within the general confines of the perimeter road, where existing contamination occurs. If impacts to "clean" areas such as the proposed construction and disposal area are unavoidable, then any damaged resources should be fully mitigated. There is no mention of adequate mitigation for past or proposed impacted natural resources, including forests, waterways, and meadows currently within the proposed construction area for the OSDF. With National Environmental Policy Act (NEPA) and any other mitigation-related rules being applicable or Relevant and Appropriate Requirements (ARARs), please address how mitigation requirements will be addressed.

If you have any questions, feel free to call or email.

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**Response:** Thank you for your comment and participation in the U.S. Department of Energy's (DOE's) decision-making process. Each of the points from the comment are addressed individually in the following response.

1. **Utilization of "CAMU" concept for Disposal Facility.** The Corrective Action Management Unit (CAMU) rule was originally established by the U.S. Environmental Protection Agency (U.S. EPA) on February 16, 1993; it was subsequently updated on April 22, 2002. The federal CAMU rule and its implementing regulations can be found at 40 *Code of Federal Regulations (CFR)* 264.522. Based on the federal rule, the State of Ohio has adopted the CAMU rule and has issued its CAMU regulations under *Ohio Administrative Code (OAC)* 3745-57-72.

The CAMU rule was developed to meet the objectives of a cleanup program under the Resource Conservation and Recovery Act of 1976, as amended (RCRA). Management of remediation (and investigation) waste within a CAMU is not subject to strict RCRA Subtitle C requirements. Specifically, waste management activities within a CAMU are not subject to Land Disposal Restrictions (LDRs). As defined at 40 *CFR* 260.10, remediation waste includes "all solid and hazardous wastes, and all media (including groundwater, surface water, soil, and sediment) and debris that are managed for implementing cleanup."

The commenter provides his view that a CAMU boundary cannot encompass “clean” areas of the Portsmouth Gaseous Diffusion Plant (PORTS) Facility and that the siting of the On-Site Disposal Cell (OSDC) in the northeast corner of the property would therefore constitute the siting of a new facility subject to LDRs. The commenter concludes that in his view the OSDC should not be able to invoke the CAMU provisions for managing and treating RCRA hazardous wastes and setting site-specific adjusted treatment standards for RCRA principal hazardous constituents outside the LDR-based treatment levels, because the OSDC would be located in an uncontaminated area.

The commenter’s view of the CAMU rule and its application to uncontaminated areas of a cleanup effort is not correct. CAMUs can encompass uncontaminated areas of a facility, provided that the inclusion of such areas for the purpose of managing CAMU-eligible waste is more protective than management of such wastes at contaminated areas of the facility (see section 3745-57-72[C][3] of the *OAC*, where the beneficial incorporation of uncontaminated area[s] into a CAMU is discussed). The commenter is correct that under the Area of Contamination (AOC) policy, the management of RCRA hazardous remediation wastes within an AOC cannot extend beyond the AOC boundary to uncontaminated areas of the facility. DOE and the Ohio Environmental Protection Agency (Ohio EPA) therefore have elected to draw from both the AOC policy and the CAMU rule in establishing protective requirements for the management, treatment, and disposal of RCRA hazardous remediation wastes during the PORTS cleanup.

The AOC policy was discussed in detail in the preamble to the National Contingency Plan (55 *Federal Register [FR]* 8758-8760; March 8, 1990). In this discussion, the U.S. EPA clarified that certain areas of generally-dispersed contamination can be called “areas of contamination” or “AOCs” and that movement of hazardous wastes within those areas would not be considered land disposal and would not trigger RCRA land disposal restrictions.

One of the best practical summaries of the differences between the AOC policy and the CAMU rule is provided in U.S. EPA’s October 1998 guidance document entitled, “Management of Remediation Waste under RCRA” (EPA-530-F-98-026). The following paragraphs, found on page 3 of the 1998 guidance document, offer this summary of the differences:

**“Area of Contamination Policy.** In what is typically referred to as the area of contamination (AOC) policy, EPA interprets RCRA to allow certain discrete areas of generally dispersed contamination to be considered RCRA units (usually landfills). Because an AOC is equated to a RCRA land-based unit, consolidation and *in situ* treatment of hazardous waste within the AOC do not create a new point of hazardous waste generation for purposes of RCRA. This interpretation allows wastes to be consolidated or treated *in situ* within an AOC without triggering land disposal restrictions or minimum technology requirements. The AOC interpretation may be applied to any hazardous remediation waste (including non-media wastes) that is in or on the land. Note that the AOC policy only covers consolidation and other *in situ* waste management techniques carried out within an AOC. For *ex situ* waste management or transfer of wastes from one area of contamination to another, see discussion of corrective action management units, below.

The AOC policy was first articulated in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). See 53 *FR* 51444 for detailed discussion in proposed NCP preamble; 55 *FR* 8758-8760, March 8, 1990 for final NCP preamble discussion. See also, most recent EPA guidance, March 13, 1996 EPA memo, 'Use of the Area of Contamination Concept during RCRA Cleanups.'

**Corrective Action Management Units (CAMUs).** The corrective action management unit rule created a new type of RCRA unit – a Corrective Action Management Unit or CAMU – specifically intended for treatment, storage and disposal of hazardous remediation waste. Under the CAMU rule, EPA and authorized states may develop and impose site-specific design, operating, closure and post-closure requirements for CAMUs in lieu of [minimum technological requirements] MTRs for land-based units. Although there is a strong preference for use of CAMUs to facilitate treatment, remediation waste placed in approved CAMUs does not have to meet LDR treatment standards.

The main differences between CAMUs and the AOC policy (discussed above) are that, when a CAMU is used, waste may be treated *ex situ* and then placed in a CAMU, CAMUs may be located in uncontaminated areas at a facility, and wastes may be consolidated into CAMUs from areas that are not contiguously contaminated. None of these activities are allowed under the AOC policy, which, as discussed above, covers only consolidation and *in situ* management techniques carried out within an AOC.”

Therefore the determination of applicable or relevant and appropriate requirement (ARARs) and the appropriate controls for the management, movement, and treatment of RCRA hazardous remediation wastes within the contaminated portions of the PORTS Facility, and in the designation of the OSDC as a treatment, storage, and disposal CAMU, draws from both the AOC policy and the CAMU rule.

The boundary of the proposed AOC that is shown on page C-1 of the Waste Disposition Proposed Plan was based on a review of 25 years of surface and subsurface soil characterization information, and is intended to depict only the necessary footprint to allow the unencumbered movement of waste within the confines of the AOC during planned remedial activities and to ensure that the overall cleanup can be done in an efficient and cost effective manner. While the contiguous vertical depth of contamination within this area varies, by using the extensive sampling data, DOE will be able to navigate during the remediation to either ensure remedial activities are consistent with the AOC policy when working in contaminated media for purposes of RCRA compliance, or use other appropriate remedial regulatory tools, such as storage/treatment CAMUs when remedial activities are outside the scope of the AOC policy.

Together the use of the AOC policy and the CAMU rule at PORTS will serve to limit the incorporation of uncontaminated areas of the facility into the site-wide cleanup to those area(s) necessary to locate the OSDC over the best available geology (shale bedrock) that is present within the PORTS reservation boundary. DOE and Ohio EPA have concluded that the best available geology for locating the OSDC is located in the northeast corner of the property boundary, and inclusion of this uncontaminated area into the CAMU designation for the purpose of managing CAMU-eligible waste is

considered more protective than locating the OSDC within the contaminated areas inside Perimeter Road, where higher permeability glacial deposits (silt, sand, and gravel) are present. If the OSDC were to be located inside Perimeter Road, the OSDC would not be directly above the desired shale bedrock. Seeking the best available geology by locating the OSDC directly over shale bedrock was viewed as the most important factor for siting the OSDC, and supports the need to beneficially incorporate an uncontaminated area of the PORTS reservation into the CAMU designation.

The remedy description provided in Section 12 of the Record of Decision (ROD) adopts Study Area D, the preferred location in the uncontaminated northeast portion of the property boundary, as the final location for the OSDC. This was the preferred location described in the Waste Disposition Proposed Plan. Incorporating this preferred location, and its desirable geology, into the CAMU designation for the OSDC is deemed consistent with the intentions of and the allowances provided by *OAC 3745-57-72(C)(3)* for the beneficial use of uncontaminated areas within a CAMU.

2. **Waste Acceptance Criteria (WAC) for On-Site Disposal.** The establishment of the site-specific CAMU-based treatment value of 5,000 parts-per-million (ppm) trichloroethene (TCE) in soil media and its approval by Ohio EPA took into account the need to protect the earthen and man-made liner materials that would be used to construct the OSDC. While this was briefly mentioned on page C-3 of the Waste Disposition Proposed Plan, the details of the technical evaluation and the protective conclusions reached by the agencies are presented more comprehensively in Supplement No. 1 to the Waste Disposition Remedial Investigation/Feasibility Study (RI/FS) (Proposed Corrective Action Management Unit and Area of Contamination Designations for Alternative 2 at the Portsmouth Gaseous Diffusion Plant, Piketon Ohio).

Supplement No. 1 indicates that the 5,000 ppm adjusted TCE treatment standard is one-third to one-half the U.S. EPA guidance level of 10,000 to 15,000 ppm in clay soil that would be indicative of free TCE product in the soil. The adjusted TCE treatment standard is proposed out of excess caution to safeguard the OSDC liner materials from exposure to excessive remaining TCE free product potentially still trapped in certain soil types even after the initial excavation process and field dewatering. If the representative concentrations exceed the 5,000 ppm TCE ceiling limit, additional steps will be necessary prior to acceptance for disposal at the OSDC to meet the OSDC WAC.

As discussed in Supplement No. 1, the 5,000 ppm TCE treatment standard is an adjusted site-specific standard that is approved for PORTS by Ohio EPA through the provisions of *OAC 3745-57-72(E)(4)(e)*. It has been determined that based on solid bedrock at the location of the OSDC, the great separation between the bedrock surface and groundwater, and the construction plans for the OSDC which exceed applicable standards, the OSDC would easily be protective of human health and the environment with the adjusted standard specified in the WAC. The adjusted standard is approved by Ohio EPA only if contaminated soils are used by DOE as the fill source for constructing the OSDC. If no PORTS fill source of contaminated soils is used, then an adjusted treatment standard will have no basis and the TCE treatment standard will revert to an accepted treatment standard of 500 ppm that is derived using the calculations and formulas found in *OAC 3745-57-72(E)(4)(d)*. The need for upwards of 2.65 million cy of engineered fill soil to construct and operate the OSDC, and DOE's intent to use

PORTS contaminated soil as the fill source, were the primary economic considerations for developing a protective, cost effective, and implementable adjusted treatment standard as allowed under *OAC 3745-57-72(E)(4)(e)*.

The final WAC provided in Section 12.2 of the ROD adopts the 5,000 ppm adjusted treatment standard for TCE, as approved by the Ohio EPA Director for the CAMU-eligible wastes resulting from the PORTS cleanup.

3. **WAC conformance with CAMU rule.** As described above for point 2, Ohio EPA granted the site-specific adjusted treatment standard under the provisions of *OAC 3745-57-72(E)(4)(e)*. Implementability, cost effectiveness, and overall protectiveness considerations were weighed by the agency to develop a protective site-specific treatment standard in view of the Ohio EPA Director's latitudes offered by *OAC 3745-57-72(E)(4)(e)*. The need for upwards of 2.65 million cy of engineered fill soil to construct the OSDC, and DOE's intent to use PORTS contaminated soil as the fill source, were the primary economic considerations used by the Ohio EPA Director for developing a protective, cost effective, and implementable adjusted treatment standard under *OAC 3745-57-72(E)(4)(e)*. Although, as described above, the OSDC is ideally located and will be constructed to exceed the latest standards for protectiveness, if DOE does not use PORTS contaminated soils as a source of engineered fill to construct and operate the OSDC, then an adjusted treatment standard will have no basis and the TCE treatment standard will revert to an accepted treatment standard of 500 ppm that is derived using the calculations and formulas found in *OAC 3745-57-72(E)(4)(d)*.

The final WAC provided in Section 12.2 of the ROD adopts the 5,000 ppm adjusted treatment standard for TCE, as approved by the Ohio EPA Director for the CAMU-eligible wastes resulting from the PORTS cleanup.

4. **Mitigation of impacted resources for the OSDC.** As discussed in the Waste Disposition Proposed Plan, DOE and Ohio EPA have selected Study Area D, situated in the northeast corner of PORTS, as the most protective location available within the PORTS reservation to construct the OSDC. A potential location for the OSDC inside Perimeter Road was evaluated in the Waste Disposition RI/FS, but was not selected as the preferred location due to unfavorable geological conditions. The geologic conditions in OSDC Study Area D provide the most favorable geologic conditions for the OSDC and are much more desirable with respect to long-term protectiveness.

As part of the evaluation in the Waste Disposition RI/FS, DOE did carefully evaluate potential impacts to natural resources and took steps to avoid and minimize impacts to the degree possible. Where impacts could not be avoided or minimized, mitigation measures are being planned in coordination with the appropriate regulating agency.

Consistent with DOE policy, the evaluation of National Environmental Policy Act (NEPA) values were integrated with the Waste Disposition RI/FS and summarized in the Proposed Plan. The evaluation conducted as part of the RI/FS satisfies DOE's NEPA obligations for the Waste Disposition decision consistent with DOE's Secretarial Policy Statement on the incorporation – to the extent practicable – of NEPA values into the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA) process and resulting CERCLA documents. DOE expanded the

evaluation in the Waste Disposition RI/FS to address issues that are generally found in NEPA evaluations.

The ARARs for the Waste Disposition ROD require that DOE mitigate unavoidable natural resource impacts resulting from the construction of the OSDC. As discussed in the Proposed Plan, impacts to streams and wetlands are anticipated in Study Area D. Efforts have been made during preliminary planning of the facility to avoid and minimize impacts to the extent possible, but some impact will occur due to the footprint of the OSDC and its support areas that will be used during construction and operation. As noted in Section 5.4 of the ROD, the mitigation of streams and wetlands is being planned in cooperation with Ohio EPA and is expected to occur on the PORTS reservation near the impacted areas in Study Area D. Mitigation measures to offset impacts to streams and wetlands will meet the substantive requirements of the Clean Water Act and other ARARs as listed in the ROD. Consistent with ARARs and agreements with Ohio EPA, the specific stream and wetland mitigation designs will be developed after the ROD, during the remedial design process. Implementation of stream and wetland mitigation measures will occur after mitigation designs have been approved.

The construction of the OSDC in Study Area D will also impact one archaeological site. Appropriate mitigation measures in the form of a Phase III data recovery effort will be conducted on the site pursuant to the requirements of the National Historic Preservation Act of 1966. The Phase III data recovery effort will be performed after the ROD is approved, but before construction activities begin in Study Area D. All efforts were made during planning of the OSDC facility to avoid impacts to archaeological sites. The mitigation measures have been coordinated with the Native American Tribal Nations, the Ohio Historic Preservation Office, the Advisory Council on Historic Preservation, and the public with an interest in historic preservation. The substantive elements of all ARARs associated with historic preservation, as listed in the ROD, will be met during implementation of the selected remedy.

Anticipated impacts to habitat and species of concern were also evaluated throughout the development of the RI/FS and Proposed Plan. The construction of the OSDC will result in the loss of potential summer habitat for the northern long-eared bat which is a federally-threatened species as defined by the U.S. Fish and Wildlife Services. Coordination with the U.S. Fish and Wildlife Service has been ongoing and appropriate mitigation measures will be implemented with the selected remedy. The timing of clearing activities in OSDC Study Area D will avoid the summer season when the northern long-eared bats are present at PORTS. Suitable alternative habitat is also available immediately south of Study Area D which can be used by the bats and therefore will reduce impacts to the species.

DOE has determined that the anticipated impacts to natural resources in Study Area D have been fully evaluated and appropriate impact minimization and mitigation measures pursuant to the required ARARs will be implemented during the selected remedy. When the planned mitigation measures are considered, the benefits associated with Study Area D in terms of long-term protectiveness off-set the impacts that will occur from the selected remedy.

2.35 Comment from Elizabeth and Josh Lamerson.

Attached are our comments for the proposed alternatives for the DOE Portsmouth site [numbers have been added to the comment by DOE to provide ease in finding the requested information in the response]. Also attached is a copy of a signed petition against the proposed OSDC. [Petition is included in Attachment 2 to this Responsiveness Summary]. Please respond to our question [sic] to my email address liz\_bee5@yahoo.com.

Thank you for the opportunity to submit our questions and concerns.

Sincerely,  
Elizabeth and Josh Lamerson

Ms. Galanti:

My husband and I are concerned citizens and fence line neighbors. We have reviewed the proposed alternatives for the future of the DOE PORTS site. We appreciate the opportunity the comment on the proposed alternatives. Our comments are as follows:

Historic Property/Area Property

[1]

- The proposal states there are two historical properties are in the area of the proposed onsite disposal cell (OSDC). One of the historic properties will be directly impacted by the proposed OSDC. The other property is near the area and will be avoided.
  - How can the historical site simply disregard this area?
  - How can you ensure the second area will be avoided?
  - Is the area that will be disturbed a burial ground?
  - Has the Tribal Nations been notified of the potential impacts to their ancestral grounds?
  - Are there state or federal requirements for the distance around a cemetery that cannot be disturbed?

[2]

- How will DOE protect the endangered Northern Long-Eared Bats and potentially the endangered Indiana Bat?
  - What measures will be taken?

Human Health/Ecological Risk

[3]

- The proposal stated that human health risk was evaluated. The proposal discusses the human health risk evaluation for alternative 1 which is no action.
  - What is the long-term risk to fence line neighbors and members of the community for the OSDC?
  - With deconstruction of the radioactively contaminated buildings and moving radioactive waste in a large disposal cell has not been evaluated. If this evaluation was conducted, what were the results?

[4]

- The proposal also only evaluated the ecological risk for no action plan.
  - What is the long-term risk to the plants and animals which will directly impact the fence line neighbors and members of the community?

Alternative 2

[5]

- The proposed OSDC will only accept waste that is currently at or originated at PORTS. Does this include the current troublesome DOE Legacy waste that is extremely difficult to send for offsite disposal?
  - If the waste doesn't meet the Waste Acceptance Criteria (WAC), what treatment will be conducted?
  - Does DOE need to obtain permits? What is the timeframe for obtaining these permits? How will this affect the potential OSDC?

[6]

- Is the bedrock below the proposed OSDC cracked?
  - Please provide evidence to prove that the bedrock is not cracked on the DOE site and in the proposed OSDC location.

[7]

- What does approximately 100 acres mean in regard to the OSDC?

[8]

- Seeing that the proposed OSDC may accept radioactive, hazardous, asbestos, PCB, solid and infectious, construction and demolition waste. What regulatory agency(ies) will regulate the OSDC?
  - Who will ensure all regulations will be met?
  - All of the types of waste have different sets of regulations. What regulations will be used for the construction and design of the OSDC?

[9]

- There are disposal sites that were created for disposal of radioactive and mixed hazardous waste located in Utah and Nevada. These locations were chosen because the environment is drier and the area has a deeper ground water table. These areas are ideal for disposal of radioactive and mixed waste. Since Ohio has a much wetter climate and the ground water table is not as deep, why would DOE want to put the local community at risk by creating an OSDC?

[10]

- The proposal states that DOE has the option to used contaminated fill. What is the long-term effects to the community of using contaminated fill?
  - If contaminated fill is used, will it be covered every day with clean fill? If not, how will the runoff be collected or contained so it does not affect the fence line neighbors?
  - Will animals be capable of digging into the contaminated fill and either ingesting the fill or tracking the contamination offsite to the fence line neighbors? How will this be monitored?

[11]

- How can the Ohio EPA provide long-term monitoring oversight when only some of the waste falls under their oversight?

[12]

- What's the definition of long-term as referred to the maintenance, monitoring, etc.

[13]

- What corrective measures will be in place if the 5-year review of the OSDC is not performing as designed?

[14]

- What are the additional prohibitions DOE has adopted that restrict waste in the OSDC?



[15]

- What studies have been conducted to ensure the WAC requirements are protective of human health and the environment?

[16]

- If the hazardous waste has to meet LDR prior to being placed in the landfill, what actions will be taken to ensure no contaminants will leak into the ground water?

[17]

- Are there any wells within 1,000 feet of the potential OSDC site?

[18]

- What are the intended details of the additional engineering-based requirements to protect workers and the community during operations? Will these be developed prior to construction?

[19]

- This document states that Alternative 2 has a cancer risk of 1:100,000. How is this number derived? Any increased cancer risk is too much. Does this number take into account that radioactive/hazardous/solid/asbestos/PCB/construction debris will be handled multiple times prior to being placed in the OSDC?

[20]

- Were the "Construction truck trips to PORTS" calculated into the increased transportation hazard?

[21]

- What is the source of all of the transportation data used to calculate the risk for the alternatives?
  - Were statistics from DOE conveyances used?

[22]

- What review has been conducted to determine the risk and potential injury using heavy equipment onsite at the OSDC? How does it compare or add to the transportation risk numbers?

[23]

- If Alternative 2 is implemented, an Impacted Materials Transfer Area (IMTA) and Corrective Action Management Units (CAMUs) may be created. If this is the case, where will this activity be conducted?
  - Will it increase the size of the OSDC?
  - Will these areas require additional controls? Will they be designed with a liner and cap once complete?

[24]

- Is all process gas equipment (converters, compressors, coolers) being sent for offsite disposal?

[25]

- Study area D requires a waiver of OAC 3745-27-07(H)(4)(d). How will the headwaters of four drainage streams affect the run-on/runoff of the OSDC?
  - Although the proposal states the streams are supposed to be re-routed, where will the waters be re-located?
  - Will this have any ecological effect on the re-routed property?
  - Will this cause new flooding zones?
  - If contaminated fill is used in the OSDC, will the runoff be contaminated?
  - Will contaminated fill be used in the cap or the lining?

### Alternative 3

[26]

- The proposal states that Alternative 3 has a higher injury and fatality rate compared to Alternative 2. This is based on miles travelled through transportation. Does this statistic include the higher injuries and fatality of building the OSDC (heavy equipment, contamination to water, etc.)?

[27]

- As a fence line neighbor and a lifelong member of the community the difference between \$882 Million and \$1.1 Billion seems minimal. How will a radioactive/RCRA/TSCA/Solid/CD&D landfill affect property value?
  - We have been told verbally at DOE fence line neighbor meetings that studies have been conducted on the effects of property value for a landfill in the area. We were also told that these studies were based on solid waste landfills. Have there been studies on how a radioactive/RCRA/TSCA/Solid/CD&D landfill in the immediate area will affect property value within the county and for fence line neighbors? Please provide documentation and source of documentation.
  - What plans are in place to compensate the fence line neighbors/community for the lost value?

[28]

- How will an OSDC affect future development of the site and the local area?
  - The proposal states the OSDC will have minimal impact for future development. Where did this information come from? How was this developed?

### Miscellaneous

[29]

- The proposal states Alternative 2 is the best option. This is a matter of opinion. This proposal is written with a positive spin to convince the reader that Alternative 2 is the best option. If you look at the best option for the fence line neighbors and the local community Alternative 2. If you look at the effects of the community not unemployment rate and community development. This is irrelevant. What happens to Pike County after an OSDC is built?

[30]

- The SSAB is made up of labor leaders which is a conflict of interest. Many concerned citizen have applied for these positions on the SSAB that are well qualified and concerned for the community well being not just helping job growth. These qualified individuals were not chosen to take part in the SSAB. What credentials need to be met to be on the board? How were the board members chosen?
  - My husband and I attended SSAB meetings and asked questions that were never answered.

[31]

- How high is the proposed landfill?

[32]

- The list of potential targeted fill source areas state the X-749B landfill may be used. What are some items that may be excavated from this landfill?
  - Will these items be sampled for hazardous characteristics to ensure they will meet the WAC?
  - Will large items from the landfill be used as fill?

- Historical knowledge and information suggests items placed in the existing landfills were placed in the areas prior to regulations being in place. What efforts will be made to ensure everything meets the WAC?

[33]

- What standards/regulations will be used for the OSDC when so many regulations apply to each waste stream?

[34]

- Will all hazardous waste disposed of in the OSDC going to meet LDR?
  - If so, will treatment be conducted onsite?

[35]

- How was the adjusted treatment standard of 5,000 ppm for TCE derived?
  - Why is the standard for TCE adjusted?

[36]

- What are the WAC limits for the radioactive isotopes?
  - Is the assay limited to 20% in the OSDC?
  - What are the specific limits for U-235? Tc-99?
  - How are these limits derived?
  - How do the limits compare to the permitted landfills such as NNSS and EnergySolutions?
  - Will the limits be concentration based or gram based?

[37]

- Where will the TRU waste be disposed?

[38]

- Are liquids of any form permitted in the OSDC (e.g., lab returns)?

[39]

- Will any X-326 converters, compressors, or coolers permitted in the OSDC?

[40]

- Who will be regulating the assay for the material that is placed in the OSDC? Who will ensure that the assay does not exceed 20%?
  - Although Component 1B states items over 20% are prohibited, it excludes miscellaneous parts, pipes, valves and empty containers, etc. Why are these items excluded?

[41]

- What is the complete list of "CAMU-eligible" waste?

[42]

- How will the CAMU areas be segregated from the OSDC area?

[43]

- All commitments should be codified in the ROD and it is the responsibility of the Ohio EPA to ensure that DOE meet the commitments they have made. Is the Ohio EPA ready and willing to ensure these commitments are kept?

We are extremely concerned at the potential that a radioactive/RCRA/TSCA/Solid waste landfill will be in our neighborhood. We have young children and are concerned for their health and future. We appreciate the opportunity to comment on the future of our neighborhood. Please respond with the answers to our questions to the following email address [liz\\_bee5@yahoo.com](mailto:liz_bee5@yahoo.com).

Sincerely,  
Elizabeth and Josh Lamerson  
Concerned Citizens and Fence Line Neighbors

**Response:** The U.S. Department of Energy (DOE) thanks you for your participation in the public comment process. Over the past several years DOE has completed its study of the geology of the site to fully assess the safety of on-Site disposal, and presented detailed information about what an on-Site disposal cell (OSDC) could and could not accept. This information can be found in the Remedial Investigation/Feasibility Study (RI/FS).

The questions posed in the comment above have been addressed in the order that they were made.

1. The layout of the OSDC has been designed to avoid impacts to one of the archaeological sites, but impacts to a second site cannot be avoided. The archaeological site that will be impacted is not a burial site (none of the archaeological sites at the Portsmouth Gaseous Diffusion Plant [PORTS] are burial sites). As described in the Proposed Plan, the implementation of a Phase III data recovery investigation is the appropriate measure to mitigate the impacts to the site. A Phase III data recovery is the most in depth investigation of archaeological sites performed in the State of Ohio.

The archeological sites and OSDC have been discussed in detail with interested Tribal Nations. DOE and Fluor-B&W Portsmouth LLC made a visit to Oklahoma in November 2012 to meet with the four interested tribes. Members from two of the tribes also visited PORTS in May 2013 and toured the proposed OSDC project area, including the two archaeological sites located in and near the project area. The Tribal Nations have expressed agreement with DOE's proposed mitigation plan associated with archaeological site that will be disturbed.

The archaeological site that can be avoided is located far enough from the OSDC so that it will not be impacted during project implementation.

Neither state nor federal statutes set requirements for the distance around a cemetery that cannot be disturbed.

2. DOE has been in close consultation with U.S. Fish and Wildlife Service to evaluate potential impacts to the northern long-eared bat and appropriate mitigation measures. As described in Section 8.3.2.1.3 of the RI/FS, tree clearing activities in the area will not occur when bats are roosting at PORTS. Suitable alternative habitat is also available nearby which can be used by the bats, reducing impacts to the species.
- 3 and 4. Section 9.2.2.1.3 of the RI/FS describes long-term (after cell closure) effectiveness and permanence for Alternative 2 to human and ecological receptors. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) requires that Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA) actions protect to levels between  $10^{-4}$  and  $10^{-6}$  excess lifetime cancer risk. That means that if the presence of contamination causes one person in 10,000 ( $10^{-4}$ ) to have an increased likelihood of contracting cancer at any time, then remediation must take place to lower this risk. Likewise, remediation does not have to lower the risk to levels below one person in a million ( $10^{-6}$ ) experiencing an increased likelihood of cancer.

To have any risk whatsoever, a person must be exposed to the contaminants in some way. This exposure can be through activities such as breathing contaminated air or drinking contaminated water. These means of exposure are called “pathways”.

Modeling for the OSDC waste acceptance criteria (WAC) showed that the geologic conditions under and around the OSDC prevent completion of any exposure “pathways” within a 1,000-year time frame. This means that even if the man-made components and liners of the disposal facility fail, the bedrock under the OSDC restricts the movement of contamination to the point that it cannot reach any surface water bodies (e.g., streams) or groundwater sources for more than 1,000 years. If there is no pathway to people, plants, or animals, then there is no calculable risk to all humans and ecological receptors for over 1,000 years. This time frame is used for DOE planning purposes only and the protection provided by the disposal cell would last much longer.

The Individual Analysis of the Process Buildings RI/FS for Alternative 2 (Sections 8.2.2.1.1 and 8.2.2.1.3) also explains that there is also no long-term risk to off-Site receptors from decontamination and decommissioning (D&D) of the buildings at PORTS because there are no completed exposure “pathways”. The buildings are gone and the waste moved to safe containment, which is addressed under the waste disposition remedy.

5. Low-level (radioactive) waste currently stored at PORTS can be considered for disposal in the OSDC, if the WAC are met. If the WAC cannot be met, the waste will be sent off the Site for disposal. No permits are required to be obtained for CERCLA actions conducted on Site. However, the substantive requirements of environmental state and federal regulations that have been identified as applicable or relevant and appropriate requirements (ARARs) must be satisfied.
6. As indicated on page A-1 of the Proposed Plan, the Cuyahoga shale located at the proposed location of an OSDC has been tested and found to be fractured near the surface down to a depth of approximately 20 ft. At depths greater than 20 ft, the bedrock was found to be intact with no fractures or cracks. Pages I-13 and I-14 in Appendix I of the RI/FS Report describe the investigation related to fractures. The OSDC liners will be built on the intact bedrock after removal of the fractured bedrock.
7. As stated on page 3 of the Proposed Plan, the 100 acres is the approximate size of the area dedicated to the OSDC after closure that must remain under DOE ownership. This area includes the capped area and a small area between the cap and the final fence.
8. This project provides a decision on how to disposition the waste generated from actions conducted under the Ohio Environmental Protection Agency (Ohio EPA) Director’s *The April 13, 2010 Director’s Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action, including the July 16, 2012 Modification thereto* (DFF&O). The DFF&O was issued to DOE pursuant to the authority vested in the Director of Ohio EPA under *Ohio Revised Code* Sections 3704.03, 3734.13, 3734.20, 6111.03, and 3745.01, and DOE entered into the DFF&O pursuant to Section 104 of CERCLA, 42 *United States Code (USC)* §9604, Executive Order 12580, and the Atomic Energy Act of 1954, as amended, 42 *USC* §2011, *et seq.* The ARARs listed in the Appendix to this Record of Decision (ROD) are the total

set of regulations that apply to the selected alternative and were identified considering all the potential waste sources that could be received by the OSDC.

9. The selection of Alternative 2 as the preferred remedy followed the evaluation process specified in CERCLA 117(a), the NCP 300.430(f)(2), and documented in the RI/FS. The process considered numerous factors, including the climate, geology, and hydrogeological conditions at PORTS. The assessment concluded that there would be no unacceptable risk to the local community from building and operating an OSDC.
10. The long-term protectiveness evaluation of the OSDC, described in responses 3 and 4 to this comment, included consideration of contaminated soil as fill for the OSDC. Like D&D waste, contaminated fill must meet the WAC to be used in the OSDC.

The process for placing waste and fill in the OSDC will be developed as part of the remedial design. The remedial design will address contamination control, dust control, runoff and leachate management, access controls for humans and animals, and monitoring requirements during OSDC operations. Controls will be in place in an effort to keep animals from digging in or taking away contaminated fill.

11. Please see response 8 to this comment. Ohio EPA and DOE have entered into the DFF&O which serves as the basis under which the OSDC will be built and operated. The DFF&O provides the necessary authority to Ohio EPA to oversee long-term monitoring of the OSDC.
12. Long-term, when discussing the evaluation of alternatives, is the time frame after waste disposal is complete and the disposal cell closed. Long-term protection provided by the disposal cell is defined as the length of time in the future that maintenance and monitoring must occur to ensure the disposal facility remains a protective disposal mechanism for the waste.
13. The corrective measures cannot be defined at this time because they will depend on the performance issue that may occur. If a performance issue is found during routine monitoring or during the 5-year review, potential corrective actions would need to be determined at that time, presented to Ohio EPA, and implemented, as appropriate and with Ohio EPA concurrence.
14. Appendix B, Table B.1, of the Proposed Plan as well as Section 12.2 of this ROD provides a list of the restrictions on the types of waste that can be placed in the OSDC.
15. Extensive studies were conducted to support development of the modeled WAC. They are discussed in Section 2.2 and Appendices D and I of the RI/FS. The actual data can be found in Appendices A through C of the RI/FS.
16. To ensure containment of contaminants, the OSDC design includes a multilayer cell liner system, leachate collection and treatment system, leachate monitoring system, and a multilayered cell cover system. Current design features of the OSDC in combination with the understanding of the underlying geology conclude that no contamination will be able to leak from the bottom of the cell and exceed regulatory limits in surface water or groundwater for protection of human health and the environment. Confirmation of

effective containment of contaminants is to be provided by a network of monitoring wells surrounding the OSDC. In addition, between the ARARs and the WAC, there are limits as to the type of waste that may be placed in the OSDC. The waste does not have to meet Land Disposal Restrictions before disposal in the OSDC because the OSDC has been designated as a Corrective Action Management Unit (CAMU). The CAMU regulations set by the U.S. Environmental Protection Agency (U.S. EPA) and adopted by Ohio EPA provide flexibility to the Resource Conservation and Recovery Act of 1976, as amended disposal requirements when applied to remediation projects versus when applied to typical industrial production operations.

17. There are no water supply wells or developed springs within 1,000 ft of the limits of waste placement footprint of the OSDC (see Figures D.33 and D.34 in Appendix D of the RI/FS).
18. As required by the DFF&O, the remedial design will include plans that will address the protection of workers, the public, and the environment during both construction and operations activities which will be in compliance with ARARs which have been negotiated and concurred with by Ohio EPA.
19. As described in responses 3 and 4 of this comment, the NCP requires that CERCLA actions are protective to levels between  $10^{-4}$  and  $10^{-6}$  excess lifetime cancer risk. The level of risk is calculated according to U.S. EPA Risk Assessment Guidance and refers to the risks to an individual, over 30 years, associated with presence of the waste.

The RI/FS states that any considered alternative must not exceed a  $1 \times 10^{-5}$  excess cancer risk level, which is well within U.S. EPA requirements and meets Ohio EPA requirements. The Proposed Plan stated that the long-term risk to humans for Alternative 2 is *below* the  $1 \times 10^{-5}$  limit, not that Alternative 2 poses that level of risk. In fact, because the geology of the OSDC location greatly prohibits movement of contaminants, there was no calculable risk to any receptors (human or ecological) for at least 1,000 years.

Handling of the waste poses short-term risks which are considered with other balancing criteria. Balancing criteria are evaluated to identify differences between the alternatives being considered. The risks associated with cell construction and waste placement are the same no matter where the disposal cell is located. These risks therefore are not specifically calculated because they do not create a difference between Alternative 2 and Alternative 3.

20. Construction truck trips to PORTS, which bring construction material for the OSDC to PORTS and are shown in Table 4 and Figure 5 of the Proposed Plan, are included in the transportation risk calculations.
21. The statistics for transportation risks consider national averages because DOE vehicles would have to interact with public and commercial transport vehicles. The source of these statistics is *A Resource Handbook on DOE Transportation Risk Assessment*, DOE/EM/NTP/HB-01, U.S. Department of Energy, National Transportation Program, 2002.

22. Impacts common to both alternatives, such as the risk of work place accidents associated with cell construction or waste placement, are not included in the evaluation of short-term effectiveness. Balancing criteria, like short-term effectiveness, are evaluated to identify a difference between the alternatives being considered. The risks associated with cell construction and waste placement are the same no matter where the disposal cell is located. These risks therefore are not specifically calculated because, unlike transportation risk, they do not create a difference between Alternative 2 and Alternative 3.
23. The Impacted Materials Transfer Area (IMTA) will be located adjacent to the OSDC as a temporary storage area to support OSDC operations. The IMTA will have a regulatory designation of "treatment and storage CAMU". Specific contamination controls for the IMTA will be developed as part of the remedial design. The IMTA will be removed and contaminated materials placed in the OSDC when the cleanup at PORTS is complete. Specific requirements to close the IMTA will be defined and developed in a closure plan to be completed at a later date. Closure of the IMTA is not expected to increase the size of the OSDC. This is discussed in Section 8 of the RI/FS.
24. The final WAC states that only the converters, compressors, and coolers from X-326 must be sent off the Site for disposal. If other process gas equipment exceeds the WAC, it will need to be treated or sent off the Site.
25. The Surface Water Management and Erosion and Sediment Control Plan, which will be submitted as part of the remedial design for the OSDC, will illustrate the rerouted streams and surface-water controls to prevent contaminated run-off from entering streams according to the ARARs. Mitigations required under the Clean Water Act 404/401 will be implemented, including considerations for aquatic ecological impacts and flooding.

All potentially-contaminated runoff from the OSDC operations will be collected for treatment, as needed, prior to discharge. No contaminated fill will be used in the liner or the cap of the OSDC. The use of contaminated fill, rerouting of streams and erosion control measures will be completed in accordance with ARARs which have been concurred with by Ohio EPA.

26. As discussed in response 22 to this comment and written on page 21 of the Proposed Plan, the industrial risks from constructing and operating an OSDC are comparable to constructing and operating an off-Site disposal facility and consequently, have not been calculated. They do not create a comparative difference between Alternatives 2 and 3.

Contamination of water must be prevented during operation of the OSDC in accordance with ARARs and therefore does not create a short-term risk. The potential for contamination of water after closure of the OSDC is evaluated as part of the long-term protectiveness evaluation. See responses 3 and 4 of this comment regarding long-term protectiveness.

27. DOE will work closely with neighbors of the site during construction of the OSDC to answer questions and resolve any issues in a timely manner. Once completed, the OSDC will have a grass-covered cap and will blend in with the topography of the landscape around PORTS.



As part of the RI/FS process, DOE researched and considered the potential socioeconomic impacts associated with construction of an OSDC as part of the overall decision process. Discussion on this evaluation is presented in Section 9.2.2.2.2 of the RI/FS Report. In summary, U.S. EPA has conducted reviews of the potential correlation between property values and the location of Superfund and other contaminated sites. These reviews have found that most property value impact studies are ill-fitted to the task of identifying causal linkages between the price effects they evaluate and the impact of U.S. EPA cleanup actions. (See U.S. EPA, Superfund “What Does the Evidence Say About Property Value Studies to Assess the Benefits of the Superfund Program” [<http://www.epa.gov/superfund/programs/recycle/effects/property.html>]). While property price effects from a permanent on-Site disposal action are inconclusive, the short-term period (i.e., during active disposal facility construction and operation) impacts to adjacent land parcels, if any, from construction, operation, or final capping of the OSDC (e.g., noise, light, fugitive dust) would be mitigated to the extent practicable.

28. The statement is from a qualitative assessment based on the fact that only 100 acres out of approximately 4,000 acres of land on the DOE reservation would be permanently dedicated to the OSDC and not available for future development.
29. DOE completed the investigation and evaluation of waste disposal alternatives and selected Alternative 2 as the remedial action based on projected impacts, including impacts to all members of the public, wherever that impact may occur. While DOE is concerned about impacts to individual community segments, it must equally consider all members of the public that could be impacted by the decision. This consideration is completed through an evaluation of balancing criteria including short-term effectiveness, implementability, and cost which assesses near-term impacts to public health and the environment during implementation of the remedy and balances those impacts with ease of implementing the remedy and the cost of the remedy, among other criteria.
30. The requirements for selecting members for the Site-Specific Advisory Board (SSAB) are provided in the Advisory Board Charter for the Environmental Management SSAB (<http://energy.gov/sites/prod/files/2014/05/f15/EM%20SSAB%20Charter%202014%20-%20signed.pdf>). The PORTS SSAB members are selected to represent diverse backgrounds, employment, interests, and viewpoints within Pike, Jackson, Ross, and Scioto counties in accordance with these requirements.
31. The highest point on the final cover surface will be about 816 ft above mean sea level. In general, the top of OSDC will be at about the same height as the current tree tops in the area.
32. The X-749B is the Peter Kiewit Landfill, which holds debris from the initial construction of the site. If the landfill is exhumed, the materials will be characterized to determine if they meet the approved WAC, as required in plans that are still to be developed. Debris will not be used as fill but may be placed in the OSDC as waste if it can meet the WAC.
33. Appendix F of the RI/FS and Appendix A to this ROD contain the long list of environmental regulations that will be met while implementing the selected remedy.
34. See response 16 to this comment.

35. The explanation of how the adjusted treatment standard was developed is explained in detail in Supplement No. 1 to the Waste Disposition RI/FS, which can be found in the Administrative Record File.
36. The approved WAC for expected wastes and contaminants based on ARARs and impacts to surface water and groundwater from potential leaks, including radioactive isotopes, are presented in the Waste Disposition RI/FS and the Proposed Plan. The WAC includes a prohibition on the disposal of the process gas equipment (converters, coolers and compressors) from the X-326 facility into an OSDC at PORTS. The WAC also prohibits the disposal of containerized waste. The WAC also limits disposal in the OSDC to material originating from the PORTS Facility. The specific WAC-based limits for uranium-235 and technetium-99 are listed in the Waste Disposition RI/FS and were derived through the performance of fate and transport modeling, examining the potential for releases from the OSDC over a 1,000-year timeline. The modeling was based on a comprehensive understanding of the geologic conditions underlying and in the vicinity of the OSDC. More discussion on the modeling is presented in the Waste Disposition RI/FS, Appendix I. WAC from various disposal facilities cannot be directly compared due to differing geologic and climatic conditions and regulatory settings.
- It should also be noted that as part of the design process, a Hazard Analysis will be performed evaluating the need for safety limits to be applied to the operations of the facility. This Hazard Analysis will examine the need for additional mass limits for uranium-235, and perhaps other radiological or nonradiological constituents, that may be necessary to ensure the safety of the operation of the disposal facility. In general, the Hazard Analysis will examine the safety inherent in the design of the facility under expected conditions of operation as well as upset (non-normal operations) and emergency/accident conditions. Among the considerations is the need for specific controls or limits to ensure the possibility of a criticality event cannot occur. This analysis is anticipated to impose additional limitations on the mass, enrichment, and potentially the spatial distribution of uranium-235-containing waste in the disposal facility. Because the safety-basis limits have not yet been set, it is not possible to compare the final limits to other permitted landfill limits. However, the actual inventories of the radionuclides eligible for disposal in the OSDC are expected to be much less than these limits.
37. No transuranic (TRU) waste is anticipated to be generated at PORTS. If TRU waste is found, as shown in Table B.1 of the Proposed Plan, it would not be allowed to be disposed in the OSDC.
38. Only minor quantities of containerized liquid waste are allowed to be disposed in the OSDC. Lab returns may be an example of an allowed liquid waste, depending on the volume. *Ohio Administrative Code* 3745-57-14(C) defines the minor quantities of liquid waste that can be placed and is presented in the ARARs appendix to this ROD (Appendix A). Any other volumes of liquid waste would either have to be sent off the Site or could be solidified prior to on-Site disposal.
39. See response 24 to this comment.

40. See response 11 to this comment. The WAC Implementation Plan, to be developed and approved by Ohio EPA prior to receipt of waste at the OSDC, will establish the procedures and processes necessary to ensure that containerized nuclear material inventories exceeding 20 percent assay are not placed in the OSDC. The exceptions noted in the WAC only apply to debris with residual contamination and an insufficient uranium-235 mass for safety concerns (i.e., criticality incredible scenario).
41. Almost all waste expected to be generated during D&D and environmental remediation of PORTS is considered CAMU-eligible. Solid, hazardous, and mixed wastes would all be CAMU-eligible if they result from the cleanup activities at PORTS. Please see Supplement No. 1 to the Waste Disposition RI/FS for a complete list of CAMU-eligible waste streams.
42. The CAMU regulations apply to cleanup efforts and identify treatment, storage, and/or disposal facilities where alternate treatment standards and other regulatory flexibilities can be applied to enhance the opportunity for remediation. The entire OSDC and the adjacent temporary storage area are currently designated as CAMUs by this ROD.
- 2.36 Comments from Herman Potter.

(Comments from Herman Potter on the Waste Disposition decision were submitted once during the public meeting and once in writing. Both are included here but only one response is offered as the contents of the two comments are the same.)

Subject: Site-Wide Waste Disposition Evaluation Project

Dear Ms. Wiehle:

My name is Herman Potter, President of the USW Local 1-689, which represents approximately 1100 members performing various work duties at the U.S. Department of Energy (DOE) site located in Piketon, Ohio. I would like to present this letter as the public comments to the proposed plan for the "Site-Wide Waste Disposition Evaluation Project" (Plan) at the Portsmouth Gaseous Diffusion Plant.

The Plan identifies three alternatives. Alternative 1 of "no action" is unacceptable. Alternative 3 of "full off-site waste disposal" should not be pursued. The cost of the full off-site alternative will cost more than the other alternatives and the expected accidents and incidents related to transportation would be higher than the preferred alternative 2. Also, there is a concern that the elevated cost would permit the DOE and legislators the opportunity to be heavily influenced by the budget constraints delaying cleanup and removing any chance of reindustrialization of the site.

Alternative 2 "combined on-site and off- site waste disposal" is the only reasonable plan to achieve, which the USW Local 1-689 has promoted over the last few years. The local union has made attempts to convince the decision makers to pursue a remediation plan that ensures reindustrialization of the Portsmouth site. We have an opportunity to make the Portsmouth site a model for any future cleanup sites whether they are private or DOE owned. I would like to respectfully request that alternative 2 have stronger associated language related to the following:

- Waste Acceptance Criteria - the waste acceptance criteria established shall be monitored and controlled in order to ensure safe work employment and no deterrence to reindustrialization.
- Consolidation of Existing Landfills - a strong commitment to consolidate the landfills shall provide more area for reuse. The material identified within the former landfills may contain materials that could be reused within a recycle program and the sale of material could partially fund future remediation or DOE initiatives.
- Recycling Program - a recycle program should consider future use of material and establishing methods of operations and testing as part of the determination other than being just cost effectiveness. The opportunity to demonstrate future use, methods, processes and techniques to be used at other DOE sites has some value that needs to be considered.
- Build and Update Infrastructure - The plan should include a strong commitment to improving and updating the infrastructure. An adequate infrastructure is essential to maintain safe operations at the site. The commitment to improve the infrastructure shall fulfill the commitments to the operation of the American Centrifuge Project as well as being an asset to a reindustrialization process.
- Centralized Treatment Facilities -Establishing centralized treatment facilities is necessary in the recycling process. The commitment shall establish a continuation of work for the existing workforce as well as additional members from the community.
- Magnet for New Technology -An updated infrastructure and a highly trained workforce would provide an opportunity to generate new industry to the community.

We have a responsibility to conduct business in a manner that benefits society. We as a workforce and community, with the help of the DOE, have the opportunity to fulfill this responsibility. I would like to request that the Department of Energy provide stronger language to demonstrate their commitment to this community and workforce while fulfilling the DOE mission.

Comment from Herman Potter.

My name is Herman Potter. I'm the President of United Steelworkers Local 689.

Actually, Joel mentioned earlier that DOE and the contractors look at this as a holistic approach in making these decisions. We're kind of looking at the holistic approach to deal with reindustrialization of the site in dealing with this waste disposition process.

That being the case, we would like to actually strengthen some of the language. The reason is, we want to make sure that we get strong commitment from the Department of Energy as well as our political delegations and legislatures to make sure we have the corporate funding to actually pursue and make sure that we fulfill the final mission that DOE has set forth, at least the United Steelworkers, and I'm sure that some of our brothers in the building trades are also.

On the waste acceptance criteria, we would like stronger language to ensure that the waste acceptance criteria is followed and monitored.

The consolidation of the landfills, we think that's necessary. That's a good approach, and we think that's essential to forwarding towards the reindustrialization process.

As far as a recycling program, we have always been for a recycling program that's strong and has very clear direction. The documents basically state that they want them to be – that it has to be cost effective. But I think they need to go further than that. I think it needs to be – that seems to me to be a pretty subjective determination, so we would like to take the recycle process a little bit further and take it beyond just if it meets somebody's interpretation of what a cost-beneficial situation is.

In the process of the reindustrialization, we want to ensure that there is the building and the updating of the current infrastructure at the site, and actually maintain that, because at some point in time, if we truly want it to be an industrialized site, we have to make sure that it's got stuff there so people would want to move there. So keeping as this – in this holistic approach, keeping the infrastructure in place and built up and kept up – kept up to par, it actually keeps our workers safe, plus it also is a carrot for industries to come in and actually want to build and bring new industry there.

Centralized treatment facilities, that's a good approach. We need to take that approach. This is our way to demonstrate that we're better than most sites. Some sites just kind of leave plumes go. We think that this is a great opportunity for us to actually, truly not only clean up the physical stuff, but also clean up the vapors and things like that, such as the trichloroethylene.

Also at issue is that we would like for the facility, through the holistic approach, to be a magnet for new technology. And the process, over the next few years, I'm sure technology will increase greatly in dealing with contamination and treatment and things like that. We want to make sure that this site is available to take on those challenges, and actually have the support from our political legislation and the DOE to actually conduct those types of activities on our site, as pilot projects, if nothing else.

Basically, we really have a responsibility to conduct business – to conduct this business in a manner that benefits the site in the future.

I'm almost done. Basically, we have a really great opportunity. This site has got a lot of people that's really for cleaning it up. We have got a large workforce. Thanks to DOE, the steelworkers are growing, and we intend to continue to be there and continue to do a lot of good work. I would like for DOE to consider the stronger language in this commitment to do the work. Thank you.

**Response:** The U.S. Department of Energy (DOE) thanks you for your attendance at the public meeting and for your participation in the public comment process. In response to the request to include stronger language for several points, DOE has responded to each point individually.

1. **Waste Acceptance Criteria (WAC).** Stringent controls will be put in place to assure that all waste disposed in the On-Site Disposal Cell (OSDC) meets the WAC. The Record of Decision (ROD) does require compliance with the WAC. The first paragraph of the selected remedy portion of the ROD states: "Wastes not meeting the OSDC WAC will be transported to off-Site disposal facilities or be treated on Site to attain the WAC for the on-Site or off-Site disposal facility." The WAC is presented in Section 12.2 of

this ROD. Documents developed after the ROD will lay out the monitoring requirements and processes to control waste going to the OSDC to ensure that only wastes that complies with this WAC are disposed in the OSDC. In general, information known about each waste stream is evaluated by waste management experts and, with Ohio Environmental Protection Agency (Ohio EPA) review and concurrence, determined whether or not it can be disposed in the OSDC.

2. **Consolidation of existing landfills.** DOE has had multiple meetings and discussions with local stakeholders regarding its commitment to removing the existing landfills. It is important to understand that these landfills all have final remedies in place, previously selected by Ohio EPA, that are protective of human health and the environment. Due to the regulatory situation, DOE cannot make a commitment to excavate the landfills in this ROD, but it remains DOE's intent to use contaminated soils from the landfills and groundwater plumes inside Perimeter Road as engineered fill for the OSDC. DOE also needs to maintain the flexibility to use alternate sources of fill (thereby modifying the degree to which DOE needs to excavate soil from the landfills) should conditions arise during implementation that diminish the efficiency, safety, or protection of the environment along with no longer being in the best interest of the project. The level of commitment presented in the Proposed Plan is consistent with that used in the ROD. Because of the contaminated nature of the material placed in the existing landfills, and the low potential for previously disposed material being of sufficient value to offset treatment costs, any recovered material would not be considered for recycle or reuse.
3. **Recycling program.** DOE agrees that cost effectiveness may not be the only criterion under which to evaluate recycling opportunities. Therefore, DOE has not identified specific requirements, such as cost effectiveness, that would limit recycling opportunities. However, because this project is likely to take decades to implement and objectives for recycling can change over time, DOE is not selecting specific criteria on which recycling opportunities will be identified. The ROD adopts the following text, which is consistent with statements found in the Remedial Investigation/Feasibility Study: "DOE is committed to the recycling and/or reuse of materials generated through [decontamination and decommissioning] D&D of the [gaseous diffusion plant] GDP facilities, in compliance with [applicable or relevant and appropriate requirements] ARARs. Prior to implementing recycling, DOE will evaluate and document the benefits (including disposal volume savings) against the additional costs of completing the action, implementing issues, and efforts with implementing associated policy issues. DOE will evaluate the individual materials and regulatory waste types throughout implementation of D&D and recycle and/or reuse materials at DOE discretion." DOE is committed recycling and/or reuse of materials when appropriate.
4. **Build and update infrastructure.** DOE understands the public's desire for improvements to the existing infrastructure to help reindustrialization. The scope of the selected remedy includes the potential removal of essentially all man-made improvements supporting the GDP including the site rail, roads, power, and water treatment systems. However, DOE is committed to work with the community, including the Southern Ohio Diversity Initiative, to identify those opportunities where infrastructure can cost effectively remain behind after cleanup is complete. It is important to note that DOE has not currently been appropriated, or expects to be appropriated, any funds that would allow DOE to spend those funds on maintaining or

upgrading existing infrastructure solely for the purpose of reindustrialization by future users of the facility after transfer. DOE's appropriations are for the purpose of cleaning up the GDP. With that said, the reasonably anticipated future land use, i.e., reindustrialization after transfer, is a vital component of the overall cleanup approach.

5. **Centralized treatment facilities.** A centralized treatment facility may or may not be needed to support future recycling opportunities. DOE is committed to evaluating the recycling opportunities. If a centralized treatment system is deemed to be appropriate, it will be implemented either under this decision (if the treatment is simple and covered by the Waste Disposition ROD) or in a modification to this decision (if the treatment is complex and additional regulations must be added to the ARARs list and more technical evaluations are needed). The Waste Disposition ROD identifies centralized treatment as a potential option, if needed, to support future recycling.
6. **Magnet for new technology.** While the ROD identifies proven, well-tested technologies as the selected remedy, the design process will continuously evaluate if new technologies are more cost-effective while achieving the same standard of protectiveness. DOE agrees with the comment that the highly-trained workforce at the Portsmouth Gaseous Diffusion Plant should be a draw for new industries. DOE and its contractor will continue to work with local entities to promote the DOE worker as an asset.

2.37 Comment from Dick Snyder.

My name is Dick Snyder. I'm a former member of the SSAB. I'll be presenting a recommendation that I worked on when I was a member of the SSAB. It was submitted in May of this year – I'm sorry, May of '13.

The one thing I want to emphasize for the benefit of this recommendation is – there's several points on there that I would like to read off and make sure that they become part of the record. The first one, the SSAB requested no new waste generated from off-site locations be placed in any Portsmouth OSDC. That makes sense because we don't want stuff from Savannah River and we don't want stuff from Hanford, because it's a lot different character than our stuff that we're putting in the OSDC.

The second item was the PORTS EM SSAB requests all contaminated plumes be exhumed and remediated in a manner that allows for future reindustrialization without unnecessary restrictions at those locations. There was about ten areas that were impacted with that.

The third point, it's recommended that all known landfills within Perimeter Road, as identified in the Waste Disposition Remedial Investigation/Feasibility Study, or the RI/FS, be consolidated into the on-site disposal cell and remediated in a manner that allows for future reindustrialization at those locations. If radiological material exists in any of the currently capped landfills that does not meet the numerical and administrative waste criteria, it must be disposed of off-site.

The fourth item is, it's requested that all barrier material, excluding that of the 326 building, be segregated for the potential recovery of its valuable nickel. Now, I understand there was some discussion on the actual assay percentage of some of that, and that Fluor-B&W will be looking into that. If the recovery of the nickel material is not deemed to be financially advantageous or

achievable, it is requested that all barrier material be disposed off-site. Such a determination regarding the reuse of the nickel assets shall be made in the near term and shall not exceed the next five years for a finalized plan. Final disposition shall not expand beyond ten years for all of the recovered nickel to be reused/recycled and be removed from the Piketon site.

The next bullet is, it is requested that all current and existing waste from the depleted uranium hexafluoride conversion operation be disposed of off-site, as these are known to contain highly toxic and radiological contaminants.

The last item is, it is requested that the DOE fund an implementable land use plan, as was done for the Miamisburg Mound Complex, resulting in a usable end state for whatever reuse opportunities becomes available. It is requested that this plan incorporated green space and aesthetics as a component of design.

**Response:** The U.S. Department of Energy (DOE) thanks you for your attendance at the public meeting and your participation in the public comment process. DOE is responding to each of the points made individually.

1. **No off-Site waste in the On-Site Disposal Cell (OSDC).** As noted in the comment, the Site-Specific Advisory Board made the request for no disposal of waste from off the Site in 2013. In 2014, DOE wrote the Remedial Investigation/Feasibility Study with waste acceptance criteria (WAC) that specifically prohibit off-Site waste from disposal on the Site. The WAC, as approved by the Ohio Environmental Protection Agency (Ohio EPA), were submitted to the public for review with the Proposed Plan. The WAC, as written in the Proposed Plan, were adopted by the Record of Decision (ROD) with no change. The WAC state that there is “A prohibition on the acceptance of waste from off-[Portsmouth Gaseous Diffusion Plant] PORTS generating sources (excluding lab returns and treatability testing wastes and material currently stored on the Facility).”
2. **Use of contaminated plumes as fill.** DOE has had multiple meetings and discussions with local stakeholders regarding its commitment to using the plume soils as the source of fill for the OSDC. It is important to understand that Ohio EPA has already selected final remedies on most of the plumes that are protective of human health and the environment. Ohio EPA will also select a final remedy on any remaining plumes, regardless if the plume soils are used as fill, to ensure protectiveness. Due to the regulatory situation, DOE cannot make a commitment in the ROD to excavate the plumes, but it remains DOE’s intent to use contaminated plume soils as fill. DOE needs to maintain the flexibility to use alternate sources of fill should conditions arise during implementation that diminish the efficiency, safety, or protection of the environment along with no longer being in the best interest of the project. The level of commitment presented in the Proposed Plan is consistent with that used in the ROD.
3. **Consolidation of existing landfills within Perimeter Road.** DOE has had multiple meetings and discussions with local stakeholders regarding its commitment to removing the existing landfills. It is important to understand that these landfills all have final remedies in place, previously selected by Ohio EPA, that are protective of human health and the environment. Due to the regulatory situation, DOE cannot make a commitment to excavate the landfills in this ROD, but it remains DOE’s intent to use contaminated soils from the landfills and groundwater plumes inside Perimeter Road as engineered fill



for the OSDC. DOE also needs to maintain the flexibility to use alternate sources of fill (thereby modifying the degree to which DOE needs to excavate soil from the landfills) should conditions arise during implementation that diminish the efficiency, safety, or protection of the environment along with no longer being in the best interest of the project. The level of commitment presented in the Proposed Plan is consistent with that used in the ROD.

4. **Nickel recovery and recycling.** DOE believes the segmentation of the converters and recovery of the nickel for potential recycling is a viable alternative for the disposition path for the nickel. As indicated on page ES-2 of the Process Buildings Remedial Investigation/Feasibility Study (RI/FS) Report, DOE continues to evaluate the potential for the recovery/reuse of the 6,400 tons of contaminated nickel material within the converters of the X-333 and X-330 buildings. DOE's plan is to complete this evaluation before the start of deactivation for Building X-333.

DOE will prepare a more detailed evaluation of nickel recovery/reuse as part of the Remedial Design process supporting the Process Buildings ROD, when issued. This will include the evaluation of the federal/state regulatory framework which would permit the reuse of the nickel. In the event DOE concludes that there is not a viable federal/state regulatory framework to permit the recovery/reuse of the nickel, and it is not in the best interests of the government, DOE will evaluate the most appropriate, cost-effective, and environmentally-sound solution for the disposition of the nickel. The Waste Disposition RI/FS and the Waste Disposition ROD provide the flexibility for the use of the OSDC for the nickel, either within the converters or separately packaged. DOE's current plan is to recover the nickel and store it on Site until the potential for recycling/reuse can be further evaluated. As appropriate, the evaluation of nickel recovery/reuse and any resulting decision regarding final disposition of the converters, will be made available to the public. Like other decontamination and decommissioning (D&D) waste streams, only those materials meeting the WAC will be permitted to be placed in the OSDC.

5. **Depleted uranium hexafluoride conversion operation waste.** Neither the depleted uranium hexafluoride nor the converted oxide resulting from the depleted uranium hexafluoride conversion operations discussed in the comment are within the scope of the *The April 13, 2010 Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action, including the July 16, 2012 Modification thereto*. They were not evaluated for disposal (either on the Site or off the Site) in the Waste Disposition RI/FS and are not authorized for disposal by the Waste Disposition ROD.
6. **Land use plan funding.** DOE's prime contract for D&D of PORTS requires the contractor to ensure that priorities associated with future beneficial land use are considered in the prioritization, planning and execution of the D&D project within the funding constraints. At PORTS, information collected from a survey conducted by Ohio University was used to conclude that industrial reuse is the most likely future land use. DOE will ensure the D&D contractor maintains a comprehensive map detailing infrastructure upgrades, infrastructure to be left in place to support industrial reuse, and areas of real property deemed appropriate for potential transfer.

2.38 Comment from Val Francis.

Good evening, gentlemen. Good to see all four of you here. It's good to know all of you. I have some comments. I am usually noted for statements instead of speeches, but I wrote a few things down and I want you to listen to these.

My name is Val Francis and I've written these thoughts down, and I want to – just some of these points, I want you to remember.

I want to start by saying that as a local community member for 62 years now, I appreciate the level of effort DOE has put into providing information to this community, including the Portsmouth SSAB, which I have had the privilege to be a part of since its inception, our local officials and others.

I don't think there is much more that I can say that hasn't already been said pertaining to SSAB and the recommendation in 13-02. That recommendation outlines fully the fact that we, as SSAB and as a community, we're not crazy about a nuclear facility in our community. But we do understand that the OSDC can be beneficial to the community if DOE meets certain conditions.

As you well know, we have had a lot of back-and-forth discussions pertaining to the conditions with DOE and with Ohio EPA. We have understood the regulatory process did not allow for the kind of commitment that we would really like to see in the language within the proposed plan.

Just so that I won't be too ambiguous, and I don't want to be redundant, either, but I want to speak to some of the 13-02s again. The community does expect that no waste from other off-site locations will be placed in the OSDC. The community expects all contaminated plumes within Perimeter Road be remediated in a manner that allows for reindustrialization of the site. The community expects all landfills within Perimeter Road to be remediated in a manner that allows for reindustrialization.

We have spoken to the idea of the valuable nickel, and if it can be recovered, we want that to actually happen. To be clear, we also do not want any barrier materials to be placed in the OSDC. And at no time, should any depleted uranium hexafluoride materials be included in this OSDC. These are points that have been made already this evening. I'm just reiterating them again.

Lastly, on this particular part, the committee expects DOE to fund a land use plan that results in a usable end-state, that incorporates green space and esthetics as part of the design.

So really, it comes down to this, gentlemen. It comes down to some of the conversations that we have had in the past. It comes down to trust. The question that I want to ask you is this, can this community trust the U.S. Department of Energy to do what it says? Can we trust that language in those documents, that it's not too flimsy, and it won't be used later as a mechanism not to fulfill the promises that are being presented tonight to the folks that are here, and to this community.

We need to continue to make sure that we have a general and a genuine dialogue related to this – to these positions and related to the condition that allows the future, when you're gone, and most of us here are gone, that if it takes a 40-year plan to do this, that it, indeed, is what we say.

So I ask this question. Can we trust you? I believe that we probably can. I shouldn't say probably. We can. Let me reiterate just a little bit why. I really believe that if this community raises the level of this game that we're all a part of, the DOE has just as much skin in this game as anyone does in this D&D project.

I don't believe that the DOE would be foolish enough to renege on its part of the deal. And I really believe the credibility of the Department, including Mr. Bradburne, Mr. Adams, Mr. Murphie, Bill Murphie, who is not here this evening. Your credibility is on the line, too, as being a part of this whole process.

All right. I also want to make a statement to the Ohio EPA and the Ohio governor's office. The community's position on this issue could not be any clearer. Our state regulators and political bodies also know exactly what this community expects as this D&D project moves forward, and we expect them to hold DOE accountable to their end of the bargain. We want no excuses that your role is only technical. We expect you to ensure that our interests are protected.

One final statement pertaining to, really, the people of southern Ohio, which you have gotten to know. Dennis, we almost consider you as part of southern Ohio. But I don't want us to be mistaken as naive because of who we are. We are the poorest county in the State of Ohio. We are reasonable people, smart people, willing partners to work with DOE and Ohio EPA to make this project work in an efficient way that benefits this community in the years ahead.

So in closing, I hope that if you look back on this exercise in the years ahead, we can understand that DOE did what they said they would do, that they met the promises that this community expects them to. Thank you.

**Response:** The U.S. Department of Energy (DOE) thanks you for your attendance at the public meeting and your participation in the public comment process. DOE is responding to each of the technical points made individually.

1. **No off-Site waste in the On-Site Disposal Cell (OSDC).** As noted in the comment, the Site-Specific Advisory Board made the request for no disposal of waste from off the Site in 2013. In 2014, DOE wrote the Remedial Investigation/Feasibility Study with waste acceptance criteria (WAC) that specifically prohibit off-Site waste from disposal on the Site. The WAC, as approved by the Ohio Environmental Protection Agency (Ohio EPA), were submitted to the public for review with the Proposed Plan. The WAC, as written in the Proposed Plan, were adopted for the Record of Decision (ROD) with no change. The WAC state that there is "A prohibition on the acceptance of waste from off-[Portsmouth Gaseous Diffusion Plant] PORTS generating sources (excluding lab returns and treatability testing wastes and material currently stored on the Facility)."
2. **Use of contaminated plumes as fill.** DOE has had multiple meetings and discussions with local stakeholders regarding its commitment to using the plume soils as the source of fill for the OSDC. It is important to understand that Ohio EPA has already selected final remedies on most of the plumes that are protective of human health and the environment. Ohio EPA will also select a final remedy on any remaining plumes, regardless if the plume soils are used as fill, to ensure protectiveness. Due to the regulatory situation, DOE cannot make a commitment in the ROD to excavate the plumes, but it remains DOE's intent to use contaminated plume soils as fill. DOE needs

to maintain the flexibility to use alternate sources of fill should conditions arise during implementation that diminish the efficiency, safety, or protection of the environment along with no longer being in the best interest of the project. The level of commitment presented in the Proposed Plan is consistent with that used in the ROD.

3. **Consolidation of existing landfills within Perimeter Road.** DOE has had multiple meetings and discussions with local stakeholders regarding its commitment to removing the existing landfills. It is important to understand that these landfills all have final remedies in place, previously selected by Ohio EPA, that are protective of human health and the environment. Due to the regulatory situation, DOE cannot make a commitment to excavate the landfills in this ROD, but it remains DOE's intent to use contaminated soils from the landfills and groundwater plumes inside Perimeter Road as engineered fill for the OSDC. DOE also needs to maintain the flexibility to use alternate sources of fill (thereby modifying the degree to which DOE needs to excavate soil from the landfills) should conditions arise during implementation that diminish the efficiency, safety, or protection of the environment along with no longer being in the best interest of the project. The level of commitment presented in the Proposed Plan is consistent with that used in the ROD.
4. **Nickel recovery and recycling.** DOE believes the segmentation of the converters and recovery of the nickel for potential recycling is a viable alternative for the disposition path for the nickel. As indicated on page ES-2 of the Process Buildings Remedial Investigation/Feasibility Study (RI/FS) Report, DOE continues to evaluate the potential for the recovery/reuse of the 6,400 tons of contaminated nickel material within the converters of the X-333 and X-330 buildings. DOE's plan is to complete this evaluation before the start of deactivation for Building X-333.

DOE will prepare a more detailed evaluation of nickel recovery/reuse as part of the Remedial Design process supporting the Process Buildings ROD, when issued. This will include the evaluation of the federal/state regulatory framework which would permit the reuse of the nickel. In the event DOE concludes that there is not a viable federal/state regulatory framework to permit the recovery/reuse of the nickel, and it is not in the best interests of the government, DOE will evaluate the most appropriate, cost-effective, and environmentally-sound solution for the disposition of the nickel. The Waste Disposition RI/FS and the Waste Disposition ROD provide the flexibility for the use of the OSDC for the nickel, either within the converters or separately packaged. DOE's current plan is to recover the nickel and store it on Site until the potential for recycling/reuse can be further evaluated. As appropriate, the evaluation of nickel recovery/reuse and any resulting decision regarding final disposition of the converters, will be made available to the public. Like other decontamination and decommissioning (D&D) waste streams, only those materials meeting the WAC will be permitted to be placed in the OSDC.

5. **Depleted uranium hexafluoride conversion operation waste.** Neither the depleted uranium hexafluoride nor the converted oxide resulting from the depleted uranium hexafluoride conversion operations discussed in the comment are within the scope of the *The April 13, 2010 Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action, including the July 16, 2012 Modification thereto*. They were not evaluated for disposal

(either on the Site or off the Site) in the Waste Disposition RI/FS and are not authorized for disposal by the Waste Disposition ROD.

6. **Land use plan funding.** DOE's prime contract for D&D of PORTS requires the contractor to ensure that priorities associated with future beneficial land use are considered in the prioritization, planning and execution of the D&D project within the funding constraints. At PORTS, information collected from a survey conducted by Ohio University was used to conclude that industrial reuse is the most likely future land use. DOE will ensure the D&D contractor maintains a comprehensive map detailing infrastructure upgrades, infrastructure to be left in place to support industrial reuse, and areas of real property deemed appropriate for potential transfer.

2.39 Comment from Frank Halstead.

My name is Frank Halstead. I was a member of SSAB for the past six years. In the practice of being on that Board, we made recommendations. One is 10-06. That was done on November 4th, 2010.

I'm just going to read a short portion of this recommendation. The recommendation was that DOE EM SSAB recommends that DOE continue to study waste disposition alternatives. As part of this study, DOE should look at positive impacts of recycling and waste minimization. This study should include, but not be limited to, waste stabilization, recycling, metal smelting, compaction and shredding as a means of minimizing waste volumes. In addition, DOE should investigate scenarios for creating multiple, smaller cells as an alternative to one large disposal cell. It is recommended that a cost comparison of all options be provided. Thank you very much.

**Response:** The U.S. Department of Energy (DOE) thanks you for your attendance at the public meeting and your participation in the public comment process. A two phase response is offered to this recommendation.

**An aggressive recycling plan.** The Proposed Plan is a summary document, and more information on DOE's commitment to recycling can be found in the Remedial Investigation/ Feasibility Study (RI/FS). The Record of Decision (ROD) adopts the following text, which is consistent with statements found in the RI/FS: "DOE is committed to the recycling and/or reuse of materials generated through [decontamination and decommissioning] D&D of the [gaseous diffusion plant] GDP facilities, in compliance with [applicable or relevant and appropriate requirements] ARARs. Prior to implementing recycling, DOE will evaluate and document the benefits (including disposal volume savings) against the additional costs of completing the action, implementing issues, and efforts with implementing associated policy issues. DOE will evaluate the individual materials and regulatory waste types throughout implementation of D&D and recycle and/or reuse materials at DOE discretion." DOE must maintain the ability to evaluate the benefits of recycling (such as a smaller disposal cell) against impacts (including cost of preparing the material) in order to be good stewards of the taxpayer's money. DOE is committed to recycling and/or reuse of materials when appropriate.

**Smaller cells.** DOE believes that the current design for the On-Site Disposal Cell does implement the idea of using smaller cells. The design is currently for 10 smaller co-located cells, with two additional cells as a contingency. The cell construction will be phased, with

only the number of cells needed being built. For instance, initially, only three cells will be built. Once it is clear that they will be filled to capacity, the next few cells will then be built and the first set will be closed. This provides the flexibility of using a smaller cell design with the benefit of having all the cells in the most geologically secure and environmentally protective location at the Portsmouth Gaseous Diffusion Plant. This modular approach using multiple cells is the basis for the cost estimates in the RI/FS, Proposed Plan, and the ROD.

2.40 Comments from Dan Minter.

(Comments from Dan Minter on the Waste Disposition decision were submitted once during the public meeting and once in writing. Both are included here but only one response is offered as the contents of the two comments were the same.)

I'm Dan Minter. I'm a life resident here of Pike County. I actually went to – lived at the Research Center there. Before it was a Research Center, it was a family farm. I graduated from this high school. So when I say I'm from Pike County, I'm from Pike County.

I also served on the SSAB from its inception. I'm also the Vice-Chairman of the Southern Ohio Diversification Initiative as well.

Given that, you heard a couple comments about Recommendation 13-2. I'll kind of go back in history a little bit. When SSAB was formed, there were discussions about on-site disposal and off-site disposal and back and forth. I think for quite a bit of time, I don't think anyone said that we wanted a disposal cell. We tried to find a balanced approach. There's been a lot of good work on the effort to find alternatives and something that could be balanced.

We have these other disposal cells, or these plumes that you have heard about, inside Perimeter Road, that are, in some cases, 20 years or older. Those designs are not lined cells. By moving those to an on-site disposal cell that is lined could make that more protective, to use that property for reuse and economic development in the future.

Ultimately, if we could have none of that waste, have no environmental impact at any time, that certainly would be the preferred option. It's just not the cards that we're dealt.

With that, the SSAB also recommended in 13-02 that conditions would be placed on any requirement for an on-site disposal cell. One of the concerns that I have is making sure that those are firm commitments. Obviously, the on-site disposal cell, when constructed, hopefully – with the consolidation of the existing plumes and landfills, those are permanent processes. That's what the hope would be, obviously, that they do get cleaned up.

The language currently in the proposed plan is certainly not as firm as I would like to see. I would like the words "shall" and "will" as opposed to "option" or "choice". I would like to see those changed in the final process. I think that's important that we have a balanced approach.

We have – the Ohio University looked at the study and looked at the site for reuse. There's a tremendous amount of support for future use. That's only possible if we end up with a facility with the proper infrastructure and cleaned up to the level necessary to reuse.

So to meet those objectives and to meet what I find is an overwhelming interest of the community, this is an objective that's important to meet those goals. It's important to the Department, it's important to this community. And I do think the language does need to be strengthened.

I would ask our political representatives to – they certainly could help in that area. We have several of our senators and Congresspersons here tonight, or staff members with their offices. Making it very clear that the funding here would be directed towards that activity would be important to meet that objective. So not only the language in the final Record of Decision that the SSAB has recommended in 13-2, but it's also important from the standpoint of funding.

If we can meet those objectives, we have an opportunity to have a lot of interest and have a process that we can move forward with. With that, that is my comment.

Statement prepared by Dan Minter, life-time resident of Southern Ohio, Vice Chairman of Southern Ohio Diversification Initiative (SODI) and Charter Member of the Portsmouth Site Specific Advisory Board (SSAB)

I submit this statement, first, as a lifelong resident of Pike County, (Literally, this hearing is held in the Waverly High School System the same High School that I graduated from and noting the proposed site of the Onsite Disposal Cell (OSDC) is next to the family farm that I grew up on as a child) and also as the Vice President of Southern Ohio Diversification Initiative (SODI) and a charter member of the Portsmouth Site Specific Advisory Board (SSAB). I was also an elected representative of the workforce in the 1993 to the 2009 time frame.

I, like many others, have no overwhelming desire to have any on site waste disposal at the Portsmouth Department of Energy Piketon Site. With this stated, and given the fact that onsite disposal already exists at the Piketon site, and given the very strong support to reuse the Portsmouth site for ongoing re-industrialization and economic growth for the region by the community, I could accept on-site disposal under very specific conditions. Simply stated, reuse, recycle, and consolidation, are three critical legs of a basic foundation to build a path of mutual success, and potential associated support. It is from this foundation, that a balanced approach was developed, and, if committed to and supported by the Department of Energy (DOE), it would stand to fulfill most of the interests and objectives involved.

This Onsite Disposal Cell (OSDC) or the Waste Disposition Summary Plan, and the subsequent Record of Decision (ROD) is significant on several levels. It helps ensure a regulatory process for timely and committed cleanup efforts, considerations regarding environmental impacts, costs, associated risks, as well as making land and infrastructure available for future reuse. These objectives need to be balanced to provide a balanced result. If this is accomplished, the results could satisfy numerous objectives, create and preserve high-quality jobs for the people of Southern Ohio, and create future jobs within a reusable industrial park for generations to come. My full and strong support towards such efforts is contingent up an equal like vision and commitment by the Department of Energy. Of course the public's safety and health is our first priority.

The consolidation of existing plumes and landfills within the perimeter road both provides needed soil for the proposed OSDC, and also remediates these areas. Consolidating both the plumes and the source materials, will help to reduce or eliminate the potential for such contaminants to

migrate off site and enhance reindustrialization reuse opportunities and future economic initiatives.

This is a key element in my conditioned support, as it provides the soil needed for the OSDC, and also takes actions that otherwise would have not been taken, such as the consolidation of current unlined and closed landfills within the targeted perimeter road area. These areas would have remained unaddressed and would stand as an impediment to any future economic and re-industrialization efforts. Also noting the source materials and contaminated plumes within the consolidation process will be placed in a modern, state of the art, lined OSDC that is significantly designed to be more protective to the public safety and health than the existing referenced landfills and associated plumes.

This approach also represents significant cost savings to the US Government and the US tax payer's as well. This proposed action accelerates the cleanup time line at a lower overall cost as opposed to offsite disposal. Even more significant savings exist when the long term mortgage costs associated with building maintenance and pump and treat associated with the identified plumes and landfills that are designated to be consolidated within the proposed OSDC.

Again, this set of actions remediates areas that otherwise would not have been addressed, making this prime real-estate available for re-industrialization and economic growth opportunities. This enhances the environmental footprint of the site, lowers overall costs and associated risks, and accelerates the timeline to complete cleanup efforts while making the prime real estate available for reuse all within a regulatory decision document, the ROD.

We also understand the proposed OSDC is enduring and irreversible after it is completed. Thus, I need to again emphasize that any such support is contingent upon an equal and like commitment by the DOE within the Proposed Plan and the final ROD. The current plan makes clear this is the proposed or preferred plan, however, the language needs to be stronger and more committed to this end. Likewise, the decision must be clear. Simply stated, the commitments by the DOE to recycle, reuse, and consolidate, need to be just as clear as any plans associated with the proposed OSDC.

It has been stated, "Say what you will do and do what you say." This is a very basic statement and path forward that is clear for all to understand and follow. It is from this, that I ask DOE to make clear what they are saying by providing stronger commitment language within the final regulatory documents and then execute or do what was committed to. The future success of the Portsmouth site and interests of the community are defined by this simple set of commitments and their execution.

In closing, support of this proposed action and the elements associated are and have been from the beginning, contingent upon the DOE's inclusion of committed and actionable language regarding recycling, reuse, and consolidation, of the plumes and landfills within the perimeter road as the end state vision of the site within the final ROD and the actions executed thereafter in the years to come.

Respectfully submitted,  
Dan Minter



**Response:** The U.S. Department of Energy (DOE) thanks you for your attendance at the public meeting and your participation in the public comment process. DOE is responding to the request for mandatory, binding language in the Record of Decision (ROD) regarding the landfills and groundwater plumes individually.

1. **Consolidation of existing landfills within Perimeter Road:** DOE has had multiple meetings and discussions with local stakeholders regarding its commitment to removing the existing landfills. It is important to understand that these landfills all have final remedies in place, previously selected by the Ohio Environmental Protection Agency (Ohio EPA), that are protective of human health and the environment. Due to the regulatory situation, DOE cannot make a commitment to excavate the landfills in this ROD, but it remains DOE's intent to use contaminated soils from the landfills and groundwater plumes inside Perimeter Road as engineered fill for the On-Site Disposal Cell (OSDC). DOE also needs to maintain the flexibility to use alternate sources of fill (thereby modifying the degree to which DOE needs to excavate soil from the landfills) should conditions arise during implementation that diminish the efficiency, safety, or protection of the environment along with no longer being in the best interest of the project. The level of commitment presented in the Proposed Plan is consistent with that used in the ROD.
2. **The elimination of contaminated groundwater plumes:** DOE has had multiple meetings and discussions with local stakeholders regarding its commitment to using the plume soils as the source of fill for the OSDC. It is important to understand that Ohio EPA has already selected final remedies on most of the plumes that are protective of human health and the environment. Ohio EPA will also select a final remedy on any remaining plumes, regardless if the plume soils are used as fill, to ensure protectiveness. Due to the regulatory situation, DOE cannot make a commitment in the ROD to excavate the plumes, but it remains DOE's intent to use contaminated plume soils as fill. DOE needs to maintain the flexibility to use alternate sources of fill should conditions arise during implementation that diminish the efficiency, safety, or protection of the environment along with no longer being in the best interest of the project. The level of commitment presented in the Proposed Plan is consistent with that used in the ROD.

2.41 Comment from Will Henderson.

Hello. My name is Will Henderson. We're in support of the on-site disposal cell. I just want to talk about a few points.

Obviously, economic development for this region is extremely important. We feel like the on-site disposal cell takes that into consideration and allows a large portion of the current site to be redeveloped. That was one of the key criteria as we went through the process of 13-02.

Additionally, we definitely want to make sure that we go about the research and develop new ways to potentially reduce the footprint of the on-site disposal cell, as it's currently planned, by looking at the suspension. And of the suspensions that are going to be looked at in the future, we would like to have some of the material that exists inside of the process buildings looked at for reuse and recycling purposes. Thank you.

**Response:** The U.S. Department of Energy (DOE) thanks you for your attendance at the public meeting and your participation in the public comment process. During the early stages of the design of the On-Site Disposal Cell (OSDC), various ways to reduce the footprint and still provide maximum long-term protectiveness were evaluated. DOE believes that the current design minimizes the footprint of an OSDC while still providing maximum protectiveness. Additionally, DOE intends to build pieces of the cell only as they are needed instead of building the entire volume in the beginning.

The Record of Decision adopts the following text, which is consistent with statements found in the Remedial Investigation/Feasibility Study: "DOE is committed to the recycling and/or reuse of materials generated through [decontamination and decommissioning] D&D of the [gaseous diffusion plant] GDP facilities, in compliance with [applicable or relevant and appropriate requirements] ARARs. Prior to implementing recycling, DOE will evaluate and document the benefits (including disposal volume savings) against the additional costs of completing the action, implementing issues, and efforts with implementing associated policy issues. DOE will evaluate the individual materials and regulatory waste types throughout implementation of D&D and recycle and/or reuse materials at DOE discretion." DOE is committed to recycling and/or reuse of materials when appropriate.

2.42 Comment from Teddy West.

Please accept this letter as the public comments of the Southern Ohio Diversification Initiative ("SODI") to the Proposed Plan for the Site-wide Waste Disposition Evaluation Project ("the Plan") at the Portsmouth Gaseous Diffusion Plant ("PORTS"). As the United States Department of Energy ("DOE") designated Community Reuse Organization ("CRO"), SODI is acutely interested in the Plan and its affects upon the future reuse of PORTS. SODI's mission is to facilitate reuse of personal and real property at PORTS for the benefit of the residents of the four-county SODI region. Although reindustrialization of PORTS is SODI's ultimate goal, the health and safety of the workers and residents living near PORTS are of paramount importance.

The Plan presents two alternatives for the disposition of waste at PORTS. The DOE-preferred method is a combination of off-site disposal in conjunction with a one hundred acre on-site disposal cell ("OSDC"). The second alternative is the total off-site disposal of waste. DOE has estimated a cost savings over the life of the decontamination and decommissioning ("D&D") of approximately one billion dollars if the DOE-preferred method is accepted.

SODI and the community do not advocate the acceptance of an OSDC at PORTS. However, to expedite D&D, increase health and safety, and increase the opportunity for reuse of the site to benefit the region, the SODI Board of Directors has considered the acceptance of the OSDC with specific conditions. SODI would be willing to accept the DOE-preferred plan if, and only if, DOE makes firm legal commitments regarding: (1) an aggressive recycling plan to decrease the amount of waste potentially destined for an OSDC; (2) the consolidation of all existing landfills into the OSDC; and, (3) the elimination of contaminated groundwater plumes. Unfortunately, the Plan discusses these actions, but carefully avoids any legally binding commitment. DOE is asking this community to accept an OSDC with decades, and perhaps centuries of environmental concerns, while failing to commit to actions that would reduce some of the concerns regarding PORTS.

Nowhere in the plan does it state that DOE "shall" eliminate the contaminated ground water plumes or consolidate the landfills. Perhaps the most critical language can be found on page 12 of the Plan. DOE states:

The required volume of fill for an OSDC is expected to be between 2.1 and 2.6 million cubic yards. "Fill" is used to fill the empty spaces between pieces of disposed D&D waste to eliminate void spaces to ensure the long-term stability of the waste and the final capping system. This alternative proposes to use contaminated soil as fill. This contaminated fill would be obtained from areas overlying contaminated groundwater, areas with surface soil contamination by plant operations, and closed landfills inside Perimeter Rd. It is DOE's choice to use contaminated fill. DOE made that choice after an evaluation that concluded that the evacuation and disposal of that fill represents a cost-effective approach to obtaining fill when considering the overall cleanup mission of the Portsmouth Site. As described in the Scope and Role of the Response Action section, additional authorization/approval outside of this Proposed Plan would be required to obtain and use contaminated fill.

The preferred alternative also includes DOE's option to use clean fill instead of contaminated fill if the use of contaminated fill is:

- 1) Not cost effective or the most efficient use of available funding when considering the cleanup mission of the Portsmouth Site; or
- 2) Cannot reasonably be achieved in a manner that:
  - a. is safe for the workforce
  - b. is protective of human health and the environment; or
  - c. will not exacerbate the contamination already present in the areas in which fill could be obtained.

The language indicates that the preferred alternative "proposes" to use contaminated soil. It further states that it is DOE's choice to use contaminated fill. It then states that the preferred alternative includes DOE's option to use clean fill instead of contaminated fill under certain conditions. Unfortunately, the conditions are vague and subjective, leaving DOE with the unfettered discretion to change its approach at any time.

Accordingly, SODI can accept the DOE- preferred alternative only if mandatory language is inserted in the Plan that states that DOE "shall" implement an aggressive recycling program, consolidate all existing landfills into the OSDC, and eliminate all contaminated groundwater plumes. Without mandatory, binding language in the Plan, and eventually the Record of Decision, the SODI Board of Directors is vehemently opposed to the DOE preferred alternative and supports the off-site disposal of all waste.

**Response:** The U.S. Department of Energy (DOE) appreciates the statements made in the comment and is responding to the three requests for mandatory, binding language in the Record of Decision (ROD) individually.

1. **An aggressive recycling plan:** The Proposed Plan is a summary document, and more information on DOE's commitment to recycling can be found in the Remedial Investigation/Feasibility Study (RI/FS). The ROD adopts the following text, which is consistent with statements found in the RI/FS: "DOE is committed to the recycling and/or reuse of materials generated through [decontamination and decommissioning] D&D of the [gaseous diffusion plant] GDP facilities, in compliance with [applicable or relevant and appropriate requirements] ARARs. Prior to implementing recycling, DOE will evaluate and document the benefits (including disposal volume savings) against the additional costs of completing the action, implementing issues, and efforts with implementing associated policy issues. DOE will evaluate the individual materials and regulatory waste types throughout implementation of D&D and recycle and/or reuse materials at DOE discretion." DOE must maintain the ability to evaluate the benefits of recycling such as a smaller disposal cell against impacts, including cost of preparing the material. DOE is committed recycling and/or reuse of materials when appropriate.
2. **Consolidation of existing landfills:** DOE has had multiple meetings and discussions with local stakeholders regarding its commitment to removing the existing landfills. It is important to understand that these landfills all have final remedies in place, previously selected by the Ohio Environmental Protection Agency (Ohio EPA), that are protective of human health and the environment. Due to the regulatory situation, DOE cannot make a commitment to excavate the landfills in this ROD, but it remains DOE's intent to use contaminated soils from the landfills and groundwater plumes inside Perimeter Road as engineered fill for the On-Site Disposal Cell (OSDC). DOE also needs to maintain the flexibility to use alternate sources of fill (thereby modifying the degree to which DOE needs to excavate soil from the landfills) should conditions arise during implementation that diminish the efficiency, safety, or protection of the environment along with no longer being in the best interest of the project. The level of commitment presented in the Proposed Plan is consistent with that used in the ROD.
3. **The elimination of contaminated groundwater plumes:** DOE has had multiple meetings and discussions with local stakeholders regarding its commitment to using the plume soils as the source of fill for the OSDC. It is important to understand that Ohio EPA has already selected final remedies on most of the plumes that are protective of human health and the environment. Ohio EPA will also select a final remedy on any remaining plumes, regardless if the plume soils are used as fill, to ensure protectiveness. Due to the regulatory situation, DOE cannot make a commitment in the ROD to excavate the plumes, but it remains DOE's intent to use contaminated plume soils as fill. DOE needs to maintain the flexibility to use alternate sources of fill should conditions arise during implementation that diminish the efficiency, safety, or protection of the environment along with no longer being in the best interest of the project. The level of commitment presented in the Proposed Plan is also consistent with that in the ROD.

2.43 Comment from Larry Skaggs.

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facilitate reuse of personal and real property at PORTS for the benefit of the residents of the four-county SODI region. Although reindustrialization of PORTS is SODI's ultimate goal, the health and safety of the workers and residents living near PORTS are of paramount importance.

The Plan presents two alternatives for the disposition of waste at PORTS. The DOE-preferred method is a combination of off-site disposal in conjunction with a one hundred acre on-site disposal cell ("OSDC"). The second alternative is the total off-site disposal of waste. DOE has estimated a cost savings over the life of the decontamination and decommissioning ("D&D") of approximately one billion dollars if the DOE-preferred method is accepted.

SODI and the community do not advocate the acceptance of an OSDC at PORTS. However, to expedite D&D, increase health and safety, and increase the opportunity for reuse of the site to benefit the region, the SODI Board of Directors has considered the acceptance of the OSDC with specific conditions. SODI would be willing to accept the DOE-preferred plan if, and only if, DOE makes firm legal commitments regarding:

- 1) an aggressive recycling plan to decrease the amount of waste potentially destined for an OSDC;
- 2) the consolidation of all existing landfills into the OSDC; and,
- 3) the elimination of contaminated groundwater plumes. Unfortunately, the Plan discusses these actions, but carefully avoids any legally binding commitment.

DOE is asking this community to accept an OSDC with decades, and perhaps centuries of environmental concerns, while failing to commit to actions that would reduce some of the concerns regarding PORTS.

Nowhere in the plan does it state that DOE "shall" eliminate the contaminated ground water plumes or consolidate the landfills. Perhaps the most critical language can be found on page 12 of the Plan. DOE states:

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- 1) Not cost effective or the most efficient use of available funding when considering the cleanup mission of the Portsmouth Site; or

- 2) Cannot reasonably be achieved in a manner that:
  - a. is safe for the workforce
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**Response:** The U.S. Department of Energy (DOE) appreciates the statements made in the comment and is responding to the three requests for mandatory, binding language in the Record of Decision (ROD) individually.

1. **An aggressive recycling plan:** The Proposed Plan is a summary document and more information can be found in the Remedial Investigation/Feasibility Study (RI/FS) on DOE's commitment to recycling. The ROD adopts the following text, which is consistent with statements found in the RI/FS: "DOE is committed to the recycling and/or reuse of materials generated through [decontamination and decommissioning] D&D of the [gaseous diffusion plant] GDP facilities, in compliance with [applicable or relevant and appropriate requirements] ARARs. Prior to implementing recycling, DOE will evaluate and document the benefits (including disposal volume savings) against the additional costs of completing the action, implementing issues, and efforts with implementing associated policy issues. DOE will evaluate the individual materials and regulatory waste types throughout implementation of D&D and recycle and/or reuse materials at DOE discretion." DOE must maintain the ability to evaluate the benefits of recycling such as a smaller disposal cell against impacts including cost of preparing the material in order to be good stewards of the taxpayer's money. DOE is committed recycling and/or reuse of materials when appropriate.
2. **Consolidation of existing landfills:** DOE has had multiple meetings and discussions with local stakeholders regarding its commitment to removing the existing landfills. It is important to understand that these landfills all have final remedies in place, previously selected by the Ohio Environmental Protection Agency (Ohio EPA), that are protective of human health and the environment. Due to the regulatory situation, DOE cannot make a commitment to excavate the landfills in this ROD, but it remains DOE's intent to use contaminated soils from the landfills and groundwater plumes inside Perimeter Road as

engineered fill for the On-Site Disposal Cell (OSDC). DOE also needs to maintain the flexibility to use alternate sources of fill (thereby modifying the degree to which DOE needs to excavate soil from the landfills) should conditions arise during implementation that diminish the efficiency, safety, or protection of the environment along with no longer being in the best interest of the project. The level of commitment presented in the Proposed Plan is also consistent with that in the ROD.

3. **The elimination of contaminated groundwater plumes:** DOE has had multiple meetings and discussions with local stakeholders regarding its commitment to using the plume soils as the source of fill for the OSDC. It is important to understand that Ohio EPA has already selected final remedies on most of the plumes that are protective of human health and the environment. Ohio EPA will also select a final remedy on any remaining plumes, regardless if the plume soils are used as fill, to ensure protectiveness. Due to the regulatory situation, DOE cannot make a commitment in the ROD to excavate the plumes, but it remains DOE's intent to use contaminated plume soils as fill. DOE needs to maintain the flexibility to use alternate sources of fill should conditions arise during implementation that diminish the efficiency, safety, or protection of the environment along with no longer being in the best interest of the project. The level of commitment presented in the Proposed Plan is consistent with that used in the ROD.

2.44 Comment from Patricia A. Marida.

Sierra Club comments on Site-Wide Waste Disposition Evaluation Project

The Site-Wide Waste Disposition Evaluation Project for the Portsmouth Gaseous Diffusion Plant (PORTS) contains three alternatives:

Alternative 1 – No Action

Alternative 2 – Combined On-Site and Off-Site Waste Disposal

Alternative 3 – Full Off-Site Disposal

If the purpose of the Site-Wide Waste Disposition Evaluation Project is to safely and cost effectively dispose of all on-site waste generated during the decontamination and decommissioning of PORTS, while meeting the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and the Ohio Consent Decree (AKA the Director's Final Findings and Orders) according to established Waste Acceptance Criteria (WAC), while allowing for the future re-use of PORTS, then the Ohio Sierra Club Nuclear Free Committee supports Alternative 2 - Combined On-Site and Off-Site Waste Disposal with its proposed multi-layered On-Site Disposal Cell (OSDC) for the following reasons:

- 1) Alternative 2 would significantly reduce over-the-road truck mileage compared to Alternative 3, 25 million miles vs. 40 million miles.
- 2) Alternative 2 would significantly reduce rail mileage compared to Alternative 3, 1.8 million miles vs. 50 million miles.
- 3) Alternative 2 would therefore reduce both injuries and deaths compared to Alternative 3, 19 vs. 9 and 2.4 vs. 0.6, respectively.

- 4) Alternative 2 would cost \$218 million less than Alternative 3, \$882 million vs. \$1.1 billion.
- 5) Alternative 2 would produce five times the on-site jobs as Alternative 3, 209 vs. 40.
- 6) Alternative 2 would lead to a quicker clean up compared to Alternative 3, 12 years vs. 18 years.

We emphasize the importance of having all current on-site landfills, both within and outside the Perimeter Road, be fully excavated and consolidated with wastes to be disposed of within the OSDC and/or shipped off-site per the WAC for purposes of being protective of human health, safety and the environment.

Consolidation of landfills from outside the Perimeter Road is especially important as X-734, X-734A and X-734B are not believed to be lined and contain organic solvents, including known carcinogens (TCE, toluene, ketone, sodium hydroxide, ammonia hydroxide and PCBs), heavy metals (mercury and cadmium), empty drums that formerly contained hazardous metals, and uranium contaminated soils from the X-342 area.

Sincerely,

Patricia A. Marida, chair

**Response:** The U.S. Department of Energy (DOE) appreciates the support for selecting Alternative 2 for waste disposal at the Portsmouth Gaseous Diffusion Plant (PORTS) and the clear summary of the benefits of that alternative.

DOE has had multiple meetings and discussions with local stakeholders regarding its commitment to removing the existing landfills. Between the years of 1992 and 2001, final decisions on all of the landfills at PORTS, including X-734, were made. The final decisions, as selected by the Ohio Environmental Protection Agency and implemented by DOE, were to construct and maintain caps for all landfills and prevent future use of the landfills. These decisions were determined to be protective of human health and the environment and are consistent with many DOE decisions across the complex on legacy disposal landfills. Landfills outside of Perimeter Road were not considered in the evaluation. DOE will continue to maintain the caps and monitor the conditions at the landfill.

Due to the regulatory situation, DOE cannot make a commitment to excavate the landfills in this Record of Decision (ROD), but it remains DOE's intent to use contaminated soils from the landfills and groundwater plumes inside Perimeter Road as engineered fill for the on-Site disposal call. DOE also needs to maintain the flexibility to use alternate sources of fill (thereby modifying the degree to which DOE needs to excavate soil from the landfills) should conditions arise during implementation that diminish the efficiency, safety, or protection of the environment along with no longer being in the best interest of the project. The level of commitment presented in the Proposed Plan is consistent with that used in the ROD.



2.45 Comment from David Snyder, Ph.D., RPA.

Dear Ms. Wiehle,

This is in response to information provided at the November 17, 2014, public meeting regarding these two projects. The comments of the Ohio State Historic Preservation Office (SHPO) are offered in accordance with provisions of the National Historic Preservation Act of 1966, as amended and implementing regulations at 36 CFR 800.

Our responsibility in this matter is to speak to the preservation of important cultural resources as the State's preservation agency and to conduct a thorough and substantive review of documentation demonstrating that the federal agency has adequately completed a reasonable and good faith effort to identify historic properties in the Area of Potential Effects and has taken into account the effects of its undertaking(s) on historic properties. Our concurrence with federal agency findings is a fundamental requirement for the agency to demonstrate that it has fulfilled its responsibilities under the National Historic Preservation Act.

It is our understanding that the Department of Energy (DOE-Ports) will follow CERCLA law and regulations to comply with federal law, including the National Historic Preservation Act. We do not object to this. Federal and state agencies have set in motion actions that are adversely affecting historic properties. There is much work to be done to complete the necessary and important preservation efforts that federal and state agencies have initiated.

We acknowledge that DOE-Ports has conducted cultural resource studies and has initiated consultation with consulting parties. The studies contribute important information on the cultural resources throughout the DOE-Ports reservation (almost 4,000 acres) plus adjacent areas.

Our comments generally align under three basic principles: Process; Clarity; and Sufficiency. Our effort here is to make sure that we afford ample opportunity for consulting parties to work through the review to produce the best possible results. There are places where we are not sure of the steps that were followed to get us to where we are and we are not sure of what steps are to follow. It is one thing to have an abstract notion of the CERCLA review process; it is quite another to recognize where you are when you are in the middle of a discussion. In a number of instances it isn't clear to us what the final product will look like. We acknowledge that DOE-Ports has compiled information that contributes to our understanding of the history of this area. We are not sure if these initiatives will be sufficient. Importantly, how do we reach an understanding of what is sufficient and how do we know when we have completed that discussion? Regarding cultural resource preservation, we acknowledge DOE-Ports' work. Nevertheless, it is our opinion that there is work to be completed and that there are opportunities to improve upon the work that has been initiated. An integrating thread to our recommendations is to ask how the SHPO and consulting parties can help in making sure that preservation work is the best it can be for this undertaking?

The documentation presented at the November 17, 2014, public meeting describes in general terms the Applicable or Relevant and Appropriate Requirements (ARARs). Please clarify how the ARARs for the preservation and protection of cultural resources were selected and written.

- We recommend providing cultural resources consulting parties with a comprehensive list of ARARs associated with cultural resources and preservation.

- How can the consulting parties insert specific language that will become an ARAR? That is, what are the process steps that lead from a recommendation for a commitment (ARAR) that is designed to address a preservation concern to the inclusion of an ARAR as part of the formalized Record of Decision?
- How can the consulting parties provide recommendations for modifications of any of the ARARs associated with cultural resources and preservation?

The Process Building D&D summary document states that: “Some, such as the process buildings, are so large that any decontamination and remodeling efforts would be very expensive. If a reasonable proposal for reuse of a building identified for D&D under this remedial decision is received, the remedial decision could be modified to support such reuse” (Page 7).

- Our initial reaction is that this test of economically reasonable constitutes an unfair burden for a consulting party.

It is our understanding that consulting parties have offered several recommendations.

- Where recommendations have been made the SHPO requests that the DOE-Ports provide sufficient discussion that we may understand the basis of the decision to reject, accept, or continue evaluation of the proposal.
- As one example, the on-site / off-site disposal of demolition debris is framed in terms of a dichotomy – that is, off-site disposal requires transport across a half of a continent. But isn’t it possible to construct an off-site disposal area within a few miles of DOE-Ports that would reduce transportation costs and accident risks significantly from the stated transportation costs and risks? We believe that further discussion of the range of possibilities under this recommendation would be helpful.

We acknowledge that DOE-Ports has initiated efforts to bring consideration of cultural resources into the review process. Please keep in mind that the comments and examples that SHPO presents here concerning process steps are not intended to be final or comprehensive.

From here we turn to questions and concerns about the content of the mitigation. We request clarification on what the mitigation will accomplish. How will the consulting parties know that mitigation measures have been completed? What is the measure of success for the mitigation measures? And, when the mitigation measures have been successfully completed, will the mitigation products be sufficient to meaningfully balance the losses from the adverse effects to cultural resources?

We wish to clearly slate that we do not doubt the intent to complete the proposed mitigation measures. Our questions and recommendations are intended to open opportunities for a robust discussion that allows for the possibilities of expanding or focusing the scope and coverage of the cultural resources mitigation measures.

The mitigation measures include documentation of buildings prior to demolition. The focus is on buildings that are of considerable interest.

Please clarify provisions to archive this documentation.

- Who is serving as the archive? What is the authority and capacity for the archive to operate?
- Will the archive have qualified personnel? Will the archive be able to provide access to the public?
- Will it provide access to qualified researchers?

Perhaps a helpful starting point for starting a discussion on the archiving of documentation of the buildings is for DOE-Ports to describe what the archive will look like. In general we understand that the archive will be made up of primarily paper documents with several different kinds of documents including blueprints, photographs of the area before, during, and after construction.

- Will the documentation of the buildings compiled as part of the demolition be contained in bound volumes?
- Is the archive designed to maintain primarily paper documentation?
- What is the span of time that the archive is designed to maintain documents? And then what? Is the archive designed to keep documents for 5 years? Or 50 years?

DOE-Ports has demonstrated the capacity to store certain documents. However, it isn't clear if this capacity will be maintained unless there are specific provisions made in the commitments to provide for the extended maintenance of this capacity. To this end, we recommend additional provisions to establish the authority and extent of the commitment for DOE-Ports to serve as an archive.

- We recommend that DOE-Ports should conduct a study focused on the long-term responsibilities to archive a wide range of documents.
- One of the products of this study should be the preparation and agreement on an archive operation plan.
  - This plan should include guidance on steps that DOE-Ports will take before deaccessioning documents and before transferring portions of the collections to another archive.
  - That is, it is expected that paper documents will be digitized. The guidance should lay out the steps that DOE-Ports will follow in deciding whether to also retain the original paper document, transfer the original paper document to another facility, or to destroy the original paper document.
  - Who will make these decisions? How will other consulting parties be involved in the decision making?
  - How will the decision be recorded in the archive? That is, think of the records for each document in the archive as a chain of custody. Would a future researcher be able to clearly determine what documents are archived, how these documents came to the archive, and whether or not the documents that the researcher would be looking at are original?

The ARARs for cultural resources include general descriptions of mitigation measures to provide for the setting aside of artifacts from the buildings. DOE-Ports has begun the process of creating a collection of artifacts and developing displays to exhibit these artifacts.

There is much needed to clarify the objectives of these measures and how the consulting parties will know that they have been successfully completed.

- We recommend that DOE-Ports prepare a collection management plan based on generally accepted collection management practice standards.
  - The plan will provide guidance on selecting and employing a system of artifact cataloging.
  - What standards will be used in deciding to collect and accession artifacts? What will catalogue records look like? Will the public have access to the catalogue?
- We recommend that DOE-Ports prepare a study of short term and long term projected costs.
- What are the projected costs to maintain the inventory and the artifacts in the collection? Who is responsible for funding collection management?
- What are the professional standards that will be applied to personnel with responsibilities for managing the collections?
- What is expected of DOE-Ports in terms of funding and support? What is required of DOE-Ports if there are funding shortfalls that threaten the maintenance of the collections?

In the ARARs DOE-Ports speaks of a virtual museum and a virtual record of the major buildings. It isn't clear what these terms mean, and perhaps more importantly it isn't clear how we will recognize when these are established and complete? There are many questions concerning the long term objectives and viability of these mitigation measures. To be blunt, what is DOE-Ports' commitment?

- We recommend that DOE-Ports prepare a prospectus (a report that takes on somewhat the shape of something like a prospectus) that lays out for our general understanding the business model for the maintenance of the collections with the capacity and ability to use the collections to craft exhibits with value as educational tools in this region of Ohio.
  - Our initial reaction is that the maintenance and operation of a collections facility will require at least one building.
  - Is this what DOE-Ports expects?
  - Does DOE-Ports intend to integrate functions that include:
    - (1) an archive for documents;
    - (2) a collection facility to house and maintain artifacts;

- (3) an office for the development and maintenance of digital, electronic, web-based images (a virtual museum);
- (4) of office with the capacity to develop and present traveling educational exhibits (such as in schools); and
- (5) a facility with physical exhibits that allow a traditional, hands-on, educational experience.

As an essential component in the development and construction of a museum / education facility, we recommend that DOE-Ports set aside, preserve, and maintain the X-300 Building (Plant Control Facility) as a permanent symbol of the Portsmouth Gaseous Diffusion Plant complex and for extended use within the museum / exhibits / education program.

- We recommend that the DOE-Ports prepare a business model report providing details on costs and support needed to preserve the 300 Building including long-term maintenance costs, potential benefits from its preservation and integration with education programs, and potential liability (such as loss or acreage for development and restriction on kinds of development in the immediate vicinity of an educational facility).

The proposed On- Site Disposal Cell will result in adverse effects to important archaeological sites. The mitigation measures proposed in the Site-Wide Waste Disposition summary document (see Page 20) emphasize data recovery archaeological investigations at the site within the construction zone. In addition, these mitigation measures also provide for several other treatments including avoidance of other cultural resources, assurance of access to a cemetery (historic-era), and preparation of a comprehensive report.

- We recommend that DOE-Ports stipulate commitments to ensure the preservation and protection of those significant, identified, archaeological sites within the 4,000 or so acre DOE reservation that won't be directly impacted by the On-Site Disposal Cell construction.
  - We appreciate the efforts being made by DOE- Ports to manage sensitive information. It is important to establish legal protections that are not based exclusively on publically available documents that show sites where the consulting parties have agreed that construction will be restricted.
  - One way to approach this is to through deed restrictions coupled with shared agreements to restrict access to archaeological site information and with a clearly defined review process required prior to any development. As a part of establishing deed restrictions designed to restrict access to sensitive information, it may be helpful to create a series of green space areas. Within parcels of land that are somewhat larger than the archaeological sites we seek to protect there would be opportunities for environmental education programs, passive recreation, and conservation programs to help maintain connections with the abiding land of Pike County, Ohio.

On Pages 10, 11, and 12 of the Proposed Plan for the Process Buildings and Complex Facilities Decontamination and Decommissioning Evaluation Project summary document DOE-Ports enumerates a series of mitigation measures and mitigation ideas to achieve compliance with Applicable or Relevant and Appropriate Requirements (ARARs). We believe that DOE-Ports has

initiated a promising discussion. By raising concerns and questions it is our intent to enter into and participate in this discussion. We seek to ensure clarity and sufficiency by carefully following the legally established procedures. And in so doing, it is our hope that the mitigation measures can be successfully completed, meet our shared expectations, and result in a better outcome than any of the consulting parties could achieve alone.

At this time we are not sure that the brief, thumbnail, descriptions of the cultural resource management mitigation measures will fully comply with the ARARs and we are not sure that the brief, thumbnail, descriptions of the ARARs provides for sufficient coverage to comply with the laws that require preservation of important cultural resources.

In essence, a distillation: you might look at the questions and comments we raise as a request for an owner's manual.

- What tools will be needed to maintain and use the information that DOE-Ports has compiled and is continuing to compile from the conduct of surveys to identify cultural resources and the acquisition of collections to preserve artifacts that can help us tell the stories intertwined with this DOE reservation?
- How are the consulting parties to gain access to and obtain these tools? And, how shall we use these tools?
- We recommend that DOE-Ports pursue consultation concerning "the creation of an Interpretative Center that would provide a centralized location containing information on the history of the plant and the region, including aspects of the prehistory, and provide a location where items salvaged from the gaseous diffusion plant and historic artifacts could be displayed" (ibid).
- What are key provisions in the business models from successful regional museums/collections/interpretative centers? What goes into a budget for this kind of institution and facility?
- What are the guidelines and steps to preparing and submitting successful grant applications?
- What qualities in the organizational structure of successful museums best support the creative development of educational displays?

In sum, the mitigation measures for cultural resources create a mission, begin to lay out a sense of purpose, and offer a direction. We need to make sure that we are working together to successfully assemble these initiatives and launch an institution that is capable of carrying on the preservation work that DOE-Ports has started.

As a starting point, we recommend:

- (1) Preservation of the X-300 Building (Plant Control Facility) in place as an enduring museum,
- (2) Preparation of studies that provide business models to guide DOE-Ports and the consulting parties in creating the kind of institution that is capable of serving as a repository for a diverse range of materials and artifacts as well as supporting creative development of educational displays, and

- (3) Establishment of a long-term commitment by DOE-Ports to assist in a deliberate effort to acquire the necessary real estate to allow the institution described above to grow and thrive in Pike County.

Any questions concerning SHPO comments and advice regarding the Process Buildings and Complex Facilities D&D Proposed Plan and the Site-Wide Disposition Proposed Plan should be addressed to David Snyder at (614) 298-2000, or by email to [dsnyder@ohiohistory.org](mailto:dsnyder@ohiohistory.org). Thank you for your cooperation.

Sincerely,

David Snyder, Ph.D., RPA, Archaeology Reviews Manager  
Resource Protection and Review

**Response:** The U.S. Department of Energy (DOE) thanks you for your comments. Points made in the comments have been responded to below.

#### **1. CERCLA process-related comments**

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA) decision-making process results in four documents (the first two are often combined) – the identification and study of a problem to ensure it is understood, in particular with regard to the nature and extent of contamination and resulting risk that is to be addressed (the Remedial Investigation [RI]); the identification and evaluation of the various means – alternatives - to address the problem effectively so risks are reduced (the Feasibility Study [FS]); a presentation to the public of the materials prepared that describes the problem and proposes a means to address it (the Proposed Plan), and the decision (the Record of Decision [ROD] including a Responsiveness Summary). Once a CERCLA decision is made, the selected remedy is then implemented. It is through the Proposed Plan that formal input from the public, of which consulting parties are a part, is sought. However, DOE-Portsmouth Gaseous Diffusion Plant (PORTS) has been meeting with members of the public to discuss the cultural resource aspects of site clean-up and the CERCLA clean-up process since 2009. The Ohio State Historic Preservation Office (SHPO), the Advisory Council on Historic Preservation, and the DOE Federal Preservation Officer have been involved in these efforts. DOE has also been coordinating on a government-to-government basis with the Eastern Shawnee Tribe of Oklahoma, the Absentee Shawnee Tribe of Oklahoma, The Shawnee Tribe, and the Seneca-Cayuga Tribe of Oklahoma, all of whom are descendants of the ancestral Shawnee tribe who inhabited Southern Ohio and the region.

With regard to where cultural resources information ties into the CERCLA process at PORTS, cultural resource surveys of archaeological and architectural features have been performed throughout the RI and FS phases. A wide range of studies were conducted to support the Waste Disposition decision; for example geologic, geophysical, environmental, groundwater and other technical attributes of siting a disposal cell were considered. Site selection for the planned On-Site Disposal Cell (OSDC) was based on those critical factors. Cultural resource information, in particular the location of prehistoric archaeological sites, was considered and adjustments were made as much as possible to the configuration of the planned OSDC. The history of the overall study and alternative analysis and siting adjustments for protecting historic properties are explained in the Waste Disposition Proposed Plan, which was issued for public review and comment.

Likewise, during the Process Buildings RI/FS, the buildings at PORTS were evaluated to identify historic properties and determine their significance in both telling and understanding the PORTS Cold War-era story. Varying levels of documentation were identified for development that would enable comprehensive interpretation as well as an understanding of select individual resources. Please refer to the Process Buildings RI/FS for additional details.

Commitments made in both the Waste Disposition and Process Buildings RODs, of which this Responsiveness Summary is a part, are binding on DOE. The comments received on both the Waste Disposition and Process Buildings Proposed Plans have been evaluated. DOE may seek additional input from the Ohio SHPO, Native American Tribal Nations, or other members of the public regarding implementation of the measures finalized in the RODs, especially where the unique skills of archaeologists, cultural resource management professionals, and architectural historians would benefit the implementation.

## **2. Applicable or Relevant and Appropriate Requirements (ARARs)**

ARARs are laws, regulations or other promulgated requirements that are *applicable* (“A”), or *relevant and appropriate requirements* (“RAR”) to an action to be taken under CERCLA. In the case of the National Historic Preservation Act of 1966 (NHPA), it is applicable due to the proposed federal actions at PORTS. The list of ARARs for the Process Buildings decision and the Waste Disposition decision are found in Appendix A of the respective RODs. ARARs are formal, promulgated requirements and stand as they were written. An ARAR is not a commitment, but a law or regulation, the substantive compliance with which a CERCLA action must follow if the resource is present. DOE has included commitments on substantive compliance in the ARARs appendix in each ROD for each CERCLA decision. The commitments are intended to address the adverse effects to the involved historic properties. In the case of the Process Buildings decontamination and decommissioning (D&D), the measures are designed to mitigate adverse effects to the historic properties that would be affected by the selected alternative, i.e., D&D. For the Waste Disposition decision, the measures are designed to mitigate the adverse effects to a prehistoric archaeological site that is collocated within the vicinity of the planned OSD area.

DOE has developed the mitigation measures based on input sought and received throughout the CERCLA process. DOE has obtained the services of cultural resource professionals and has incorporated their input in the proposed mitigation measures. Although the Proposed Plans are the first formal solicitation of input, many opportunities to seek and provide feedback from the public have occurred over the past 5 years. DOE views the PORTS reservation in its totality and has designed mitigation measures for both the DOE-built environment and the prehistoric resources that provide for a broad range of interpretation opportunities. Comments and ideas for additional mitigation measures received during the Proposed Plans comment period have also been evaluated. It is important to note that all recommendations are considered and inform DOE’s analysis and decision-making, although not all recommendations may be implemented.

## **3. Specific comments regarding recommendations**

Regarding reuse alternatives for process buildings or other buildings included in the Process Buildings decision, these buildings are proposed for D&D because they pose risks and hazards to human health and the environment if left in place. No cost-effective alternative use has been identified for any buildings.



Recommendations were made to consider alternative near-by disposal locations at PORTS which would eliminate potential impacts on archaeological resources at PORTS.

**Locate a Site Within the Ohio Valley.** Siting a new DOE disposal facility off the Site was evaluated as a process option in the RI/FS. This evaluation can be found in Section 7 of the RI/FS. The specific suggestion to construct a new disposal facility in a limestone quarry was also evaluated by DOE in a separate technical paper that can be found in the Administrative Record File. This specific approach did not meet many state and federal laws and could not be developed into a full alternative for consideration and for those reasons was eliminated.

**Leave Clean Waste On Site as Contour Fill.** This option is a less desirable variation on Alternative 3. In Alternative 3, the waste streams are already segregated with the clean waste streams assumed to be disposed locally at a construction and debris landfill. Very little of that clean waste expected to be generated can be legally be classified as “clean hard fill” that could be used as contour fill. Mainly, only concrete can be crushed and placed as fill with no long-term maintenance or monitoring required. All other “clean” waste generated is considered solid waste by the State of Ohio and the disposal of such waste must occur in a managed landfill. If left on the Site, new solid waste landfills would have to be built in compliance with all Ohio EPA regulations. This suggested option would add solid waste landfills to PORTS in the main plant area, which would render the entire alternative even more expensive than the current Alternative 3.

#### **4. Mitigation measures**

**Learning about status of the measures.** The mitigation measures developed are intended to address the adverse effects to historic properties. DOE will provide periodic updates of the mitigation measures through newsletters, stakeholder meetings, Annual Site Environmental Reports and other means. Press releases may also be made regarding certain mitigation measures.

**Establishment of an archive re: documents and salvage items.** DOE will make arrangements for the management of the various records, blueprints, plans, photographs, and documents associated with numerous individual facilities as well as the plant overall, but no formal archive facility is planned to be established at PORTS. Information on the retained materials will also be managed in a searchable database. The database will be developed with the assistance of an archival professional and will be available for uncontrolled/unclassified documents and linked to the PORTS Virtual Museum. The PORTS Virtual Museum has been online since 2012 and DOE will also pursue a coordination effort to include a link to the Virtual Museum for the East Tennessee Technology Park (ETTP). The Oak Ridge Virtual Museum, presently in development, plans to link to other websites, including the PORTS Virtual Museum; however, final determination of the websites linked to the Oak Ridge Virtual Museum will be dependent upon both a classification and export control review. The gaseous diffusion technology used at PORTS is a duplicate of the type of process gas equipment developed and used at ETTP in the K-29, K-31, and K-33 buildings.

DOE-PORTS plans to coordinate with the Ohio SHPO and the DOE Federal Preservation Officer on the location options for the archive for retaining and preserving physical records/documents. DOE-PORTS will plan to share access to resources and information from and with other DOE sites, where opportunities exist. This also pertains to equipment. A large-scale photographic display of the equipment representative of the PORTS equipment

is part of the Oak Ridge conceptual design. Stylized representatives of the authentic gaseous diffusion process equipment utilized in the K-25 and K-27 buildings will be housed in Oak Ridge, TN in a facility that is presently being designed, as funding permits. (Replicas are being utilized because authentic equipment cannot be displayed due to classification, radiological control, security, and export control factors.) Certain small pieces of PORTS equipment that do not have classification or security issues and may be safely handled and displayed will be made available for display. DOE-PORTS has a detailed inventory of the items that have been set aside and a number of these items are already being displayed in the PORTS region. Acquisition, operation, and other available records for the pieces of equipment in the inventory have also been recorded.

PORTS was a part of the gaseous diffusion complex of the Atomic Energy Commission (AEC) (the predecessor agency to the DOE), with other gaseous diffusion plants in Paducah, KY and Oak Ridge, TN. Although the Piketon Ohio site was its own facility, it was very much a part of the larger complex which the AEC viewed as one operation with different locations. The duplicate technology was necessary to enable the diffusion complex to function cohesively. It is this duplicative nature that facilitates DOE-PORTS' optimization of its documentation and preservation efforts, linking to other physical and virtual resources at other locations wherever possible.

PORTS, along with its sister site in Paducah, KY, is the Cold War-era generation of gaseous diffusion, the descendant of the Manhattan Project era site in Oak Ridge, TN. DOE-Headquarters has established a Manhattan Project website on the Environmental Management (EM) webpage and it features all of the DOE Manhattan Project sites (the Oak Ridge sites [K-25, X-10 and Y-12], Los Alamos National Laboratory, and the Hanford Works). As a part of PORTS historic preservation research efforts, the DOE-Headquarters Federal Preservation Officer was contacted to learn about electronic and other resources available or planned for the Cold War. As a result of this inquiry, it was learned that a Cold War page has not been developed by DOE-Headquarters to date. It has been decided that PORTS will develop a Cold War webpage and populate it with information on PORTS, and link the DOE-Headquarters EM webpage to the PORTS Virtual Museum.

**Establishment of a facility/reuse of a facility.** The proposed Cold War web page, the shared resources, and the various avenues for interpretation of PORTS history, technology and equipment noted above, along with the other materials already issued, or in preparation, and measures planned or underway for PORTS constitute a wide variety of opportunities for learning about PORTS history, technology, and its contribution to the Cold War effort. DOE is not pursuing the creation of a facility for an archive and/or an Interpretive Center; however, before exiting the site, DOE will consider leaving a building for transfer to a local organization for the development of a multi-purpose facility to contain information about PORTS ranging from the prehistory to the cleanup mission.

**Virtual Museum.** The PORTS Virtual Museum is a web-based portal to a full range of information on PORTS history. It is actively managed and regularly updated with new information such as photographs, drawings, recorded oral histories, and links to documents. DOE is also preparing Historic American Building Survey and Historic American Engineering Record documentation, including archival photographs, which will be linked to the PORTS Virtual Museum. The Virtual Museum will be updated through the completion of

the D&D effort and accessible into the future. It will also be expanded to include information on the Native American prehistory of the area around PORTS.

### **5. Archaeological Historic Property Preservation efforts**

It is important that DOE clarify that only one archaeological site will be affected by the planned OSDC. If in the future there were to be transfers of real property from federal ownership that included any of the other sites, DOE would evaluate the status of those sites and DOE obligations under the NHPA at that time. Additional mitigation measures related to the prehistory of the area have also been added to Part 2 of the Waste Disposition ROD, Section 13.2.2.

### **6. Mitigation Measure Implementation**

In response to these comments, DOE has both clarified and expanded its description of the proposed mitigation measures in both RODs by providing additional information. DOE has also added further mitigation measures (please refer to Part 2 of the ROD, Section 13.2.2).

2.46 Comment from Jeanne Wilson (Representative for Senator Sherrod Brown).

I appreciate the opportunity to provide comments on the proposed plans for the Site-wide Waste Disposition and Process Buildings and Complex Facilities Decontamination and Decommissioning projects at the Portsmouth Gaseous Diffusion Plant. Getting these plans right is essential – actions at the site can help spur economic growth and opportunity for the region.

That is why I believe that all actions at the site must be strongly informed by stakeholders in Piketon, Portsmouth, and surrounding communities as cleanup and redevelopment of the site is pursued.

The proposed plan for Site-wide Waste Disposition must conform to the tenets of Recommendation 13-02 of the Portsmouth Site Specific Advisory Board (SSAB). Specifically, a future onsite disposal cell should accept no materials that originate from other locations; all waste generated from the ongoing Depleted Uranium Hexafluoride (DUF6) operations at the site should not be disposed of at the proposed disposal cell; and all non-recoverable barrier material from Process Gas Equipment should also be disposed of off-site.

Additionally, I support efforts to achieve the site's full redevelopment potential by consolidating existing landfill and associated plume material from the site into the proposed disposal cell. The site and the community will fully realize the benefits of redevelopment if the Department of Energy closely follows the recommendations outlined by the Portsmouth SSAB. I believe these plans provide an excellent opportunity to fulfill the DOE's obligation to fully clean up the site while creating new economic opportunities in Pike, Scioto, Ross, and Jackson counties. These communities have been partners with the DOE for decades. And as this process moves forward, it is essential that the DOE maintains that partnership and remains committed to working with the community and congressional delegation to keep Decontamination and Decommissioning cleanup on track and properly funded. Thank you for this opportunity to speak.

**Response:** The U.S. Department of Energy (DOE) thanks the Senator for his input on the Proposed Plan. Waste generated from locations away from the Portsmouth Gaseous Diffusion Plant (PORTS) cannot and will not be disposed in the On-Site Disposal Cell (OSDC). The waste acceptance criteria (WAC) state that there is "A prohibition on the acceptance of waste from off-PORTS

generating sources (excluding lab returns and treatability testing wastes and material currently stored on the Facility).”

Neither the depleted uranium hexafluoride nor the converted oxide resulting from the depleted uranium hexafluoride conversion operations discussed in the comment are within the scope of the *The April 13, 2010 Director’s Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action, including the July 16, 2012 Modification thereto*. They were not evaluated for disposal (either on the Site or off the Site) in the Waste Disposition Remedial Investigation/Feasibility Study (RI/FS) and are not authorized for disposal by the Waste Disposition Record of Decision (ROD)

DOE believes the segmentation of the converters and recovery of the nickel for potential recycling is a viable alternative for the disposition path for the nickel. As indicated on page ES-2 of the Process Buildings RI/FS Report, DOE continues to evaluate the potential for the recovery/reuse of the 6,400 tons of contaminated nickel material within the converters of the X-333 and X-330 buildings. DOE’s plan is to complete this evaluation before the start of deactivation for Building X-333.

DOE will prepare a more detailed evaluation of nickel recovery/reuse as part of the Remedial Design process supporting the Process Buildings ROD, when issued. This will include the evaluation of the federal/state regulatory framework which would permit the reuse of the nickel. In the event DOE concludes that there is not a viable federal/state regulatory framework to permit the recovery/reuse of the nickel, and it is not in the best interests of the government, DOE will evaluate the most appropriate, cost-effective, and environmentally-sound solution for the disposition of the nickel. The Waste Disposition RI/FS and the Waste Disposition ROD provide the flexibility for the use of the OSDC for the nickel, either within the converters or separately packaged. DOE’s current plan is to recover the nickel and store it on Site until the potential for recycling/reuse can be further evaluated. As appropriate, the evaluation of nickel recovery/reuse and any resulting decision regarding final disposition of the converters, will be made available to the public. Like other decontamination and decommissioning waste streams, only those materials meeting the WAC will be permitted to be placed in the OSDC.

DOE has had multiple meetings and discussions with local stakeholders regarding its commitment to using the plume soils and landfills as the source of fill for the OSDC. It is important to understand that the Ohio Environmental Protection Agency has already selected final remedies on all of the landfills and most of the plumes that will be implemented if a decision is made to not use the plume soils as fill. Those remedies are protective of human health and the environment and DOE will implement or maintain all selected groundwater remedies. Due to the regulatory situation, DOE cannot make a commitment in the ROD to excavate the plumes, but it remains DOE’s intent to use contaminated plume soils inside Perimeter Road as fill. DOE needs to maintain the flexibility to use alternate sources of fill should conditions arise during implementation that diminish the efficiency, safety, or protection of the environment along with no longer being in the best interest of the project. The level of commitment presented in the Proposed Plan is consistent with that used in the ROD.

DOE appreciates your comments and support of the cleanup activities at PORTS. DOE remains committed to working with the community and congressional delegation to keep the remediation of PORTS on track and properly funded.

2.47 Comment from Jason Kester.

Ms. Wiehle,

On behalf of the Southern Ohio Port Authority (SOPA), the lead economic development agency for Scioto County, Ohio, we offer the following comments in regards to both the Process Buildings and Complex Facilities D&D Evaluation Project as well as Site-Wide Waste Disposition Evaluation Project.

Process Buildings and Complex Facilities D&D Evaluation Project

The Southern Ohio Port Authority supports Alternative 2 – which includes the removal of stored waste, materials, hazards, process gas equipment, and process piping. We also support the demolition of buildings or structures and the characterization and demolition of underground man-made features.

Site-Wide Waste Disposition Evaluation Project

SOPA prefers Alternative 2 contingent upon a number of factors. We are aware that RCRA, CERCLA, and other federal and state regulatory schemes may not require the characterization, decontamination, deconstruction, demolition, and removal of all subsurface contaminants [sic], but we feel this is vital to the longevity of the site. DOE must take all reasonable efforts to “clean-up” the man-made “floating plumes” and “capped dumps” which reside inside perimeter road. The site will have little to no economic development value with both an on-site disposal cell and subsurface contaminants [sic]. We are also concerned that DOE will be the sole arbiter of determining which sites to clean-up. The Site Specific Advisory Board (SSAB), the Southern Ohio Diversification Initiative (SODI), and the local and state elected officials must be consulted. DOE must make every reasonable effort to clean-up the area inside perimeter road so that the community will have a viable site at the conclusion of the decontamination and decommissioning project.

Please do not hesitate to contact me for follow-up or additional questions.

Very Respectfully,

[signed]

Jason Kester  
Executive Director  
Southern Ohio Port Authority (SOPA)  
(c) (740) 935-2738  
jkester@sohpa.org

**Response:** The U.S. Department of Energy (DOE) thanks you for your participation in the public comment process. DOE has responded to the Waste Disposition comment below and to the Process Buildings comment in that Responsiveness Summary.

DOE has had multiple meetings and discussions with local stakeholders regarding its commitment to using the plume soils and landfills as the source of fill for the On-Site Disposal Cell. It is important to understand that the Ohio Environmental Protection Agency (Ohio EPA) has already selected final remedies on all of the landfills and most of the plumes that will be implemented if a decision is made to not use the plume soils as fill. Those remedies are protective of human health and the environment and DOE will implement or maintain all selected groundwater remedies. Due to the regulatory situation, DOE cannot make a commitment in the Record of Decision (ROD) to excavate the plumes, but it remains DOE's intent to use contaminated plume soils inside Perimeter Road as fill. DOE needs to maintain the flexibility to use alternate sources of fill should conditions arise during implementation that diminish the efficiency, safety, or protection of the environment along with no longer being in the best interest of the project. The level of commitment presented in the Proposed Plan is consistent with that used in the ROD.

DOE is also committed to maintaining a strong community relations program during the remediation of the site, and engagement with the Site-Specific Advisory Board, Southern Ohio Diversification Initiative, and local- and state- elected officials is a part of this process. DOE will continue to share information and listen to feedback on the planning, progress, and challenges encountered during the remediation effort. Ultimately DOE must maintain the final decision-making authority, in conjunction with appropriate concurrence or approvals by Ohio EPA, when developing the plans to obtain contaminated fill from PORTS landfills and plumes. The sequence of landfill and plume excavation must support the need to carefully coordinate demolition and on-Site disposal operations and ensure work is performed in a safe, environmentally compliant, and a cost-effective manner.

2.48 Comment from Chris Manegold.

I'm Chris Manegold. My day job is Chief Executive Officer for the Economic Development Alliance of Southern Ohio.

A lot has been said about trust and suspicions and such. In my eight and a half years now of working with this neighborhood, I've certainly been exposed to a lot of the passion and emotion around this, and it's good to see that it still exists.

First of all, I have known Fluor and this corporation for most of the 40 years of my career in various projects. There is an element of trust that is there in terms of their corporate reputation, but we don't have to rely on that. There is health oversight. There is environmental oversight outside of the Department of Energy, outside of Fluor's own protocols. I think we need to have confidence in that, in terms of the on-site – the on-site disposal.

From an economic standpoint, it makes a lot of sense. This is a community – the Pike County Community fought the Cold War just as much as anybody that put a uniform on. And it's good to see that the United States Government is in the process of honoring that Veteran service by the cleanup of this site. And basically getting it into a condition where it can be a productive facility, going forward.

And to echo some of the comments that were made earlier, I think this needs to be seen as the first step in a continuing process of cleanup. I think the existing – the existing cells, the existing plumes do need to be cleaned up. I think there has to be a firm commitment to that as part of this process, so that we do end up with, perhaps, a 1,000-acre industrial site at the end of the day.

But I have learned from my dealings with other federal agencies, the Department of Defense, FAA and EPA enough to know that when the government is in a position to make a decision, you darn well better have a plan to make, and I think we're all in that direction.

So I commend you for being open in this process, despite some of the other comments that have been made. I have always been able to get questions answered, I believe, to my satisfaction.

Just because we're in the economic development business doesn't mean develop at any cost. There are some things that just aren't right. This is one of those circumstances where things have aligned to make it right for the Pike County community, for the southern Ohio region and the future going forward.

My career won't survive the cleanup and the actual point of this, but we need to get the process started. We need to tip over the dominoes and begin to see things lining up and getting done on behalf of this community and on behalf of this region so that jobs can be replaced. Those are my comments.

**Response:** The U.S. Department of Energy (DOE) thanks you for your attendance at the public meeting and your participation in the public comment process. DOE has had multiple meetings and discussions with local stakeholders regarding its commitment to using the plume soils as the source of fill for the On-Site Disposal Cell. It is important to understand that the Ohio Environmental Protection Agency (Ohio EPA) has already selected final remedies on most of the plumes that are protective of human health and the environment. Ohio EPA will also select a final remedy on any remaining plumes, regardless if the plume soils are used as fill, to ensure protectiveness. Due to the regulatory situation, DOE cannot make a commitment in the Record of Decision (ROD) to excavate the plumes, but it remains DOE's intent to use contaminated plume soils as fill. DOE needs to maintain the flexibility to use alternate sources of fill should conditions arise during implementation that diminish the efficiency, safety, or protection of the environment along with no longer being in the best interest of the project. The level of commitment presented in the Proposed Plan is consistent with that used in the ROD.

2.49 Comment from Maya Armour.

Dear Ms. Galanti:

I am not commenting on the advisability of an On-Site Disposal Cell at the Portsmouth Gaseous Diffusion Plant. However, if there is such a disposal cell, I request that the soil used be from the lake bed at Lake White, a couple of miles north on Hwy 104.

ODOT and ODNR are planning construction at Lake White.

<http://www.dot.state.oh.us/districts/D09/NewsReleases/Pages/Comment-Period-Available-For-Lake-White-Project.aspx>

As part of this construction, it would be helpful to dredge the lake bed to remove silt accumulated over the years. ODOT and ODNR would need a place to put the dredged soil. The On-Site Disposal Cell would need fill to stabilize the waste.

It would be economical and efficient for the PORTS plan to obtain the fill from a single site located near the On-Site Disposal Cell. Similarly, it would be economical and efficient for ODOT and ODNR to have a nearby location to deposit the soils dredged from the lake bed. It's a win-win.

This is an opportunity for intra-agency/department cooperation to provide enhanced services to taxpayers at a lower cost.

My grandfather, George Nye, was responsible for the formation of Lake White. Through my company George Nye Company LLC, I own the lake bed. As the property owner, I can assure you of my cooperation. I would be delighted to discuss this with you further.

Sincerely yours,  
Maya Armour

**Response:** The U.S. Department of Energy (DOE) thanks you for your input. DOE evaluated two sources of fill for an on-Site disposal cell (OSDC) in the Waste Disposition Remedial Investigation/Feasibility Study in order to estimate the costs associated with the decision. The fill source you propose generally falls into the category of Source Option 1.

- **Source Option 1:** Purchase clean fill from commercial off-Site sources.
- **Source Option 2:** Use on-Site clean soil obtained from one or more new on-Site soil borrow areas that would be developed within the boundaries of the Portsmouth Gaseous Diffusion Plant (PORTS) reservation, including the possibility of borrow sources within the potential OSDC construction footprint itself.
- **Source Option 3:** Use on-Site sources of contaminated soil obtained from various areas of the plant.

In the short term, Source Option 3 has a higher cost compared to the clean fill options represented by Source Options 1 and 2. However, DOE prefers Source Option 3 as its source of fill for an OSDC in its Proposed Plan. This approach has the potential to beneficially impact the final groundwater remedial actions that would be conducted under the Ohio Consent Decree, and thus could be the cost-effective approach to obtaining fill when considering the overall cleanup mission at PORTS. The Record of Decision carries forward the option to use fill from Source Option 3 as the preferred source of fill for the OSDC. However, should conditions arise that diminish the efficiency, safety, or protection of the environment along with no longer being in the best interest of the project during DOE's effort to obtain contaminated fill, DOE can use clean fill from Source Options 1 or 2.

2.50 Comment from Carlton Cave.

My name is Carlton Cave. I'll be speaking to Recommendation 10-01. It reads as thus. "The Portsmouth EM Site Specific Advisory Board recommends that the DOE go forward with the use



of an Ohio-based institution of higher learning for the process of conducting a community-wide end-use study. The SAAB feels that it is imperative that DOE consider the following items crucial to the success of this endeavor; engaging community groups to facilitate a dialogue to identify questions, concerns and education needs related to PORTS; establishing methods and opportunities by which community members can participate and contribute to the planning of and activities ongoing at PORTS. Examples of methods are structured involvement, empowerment education models and community-based communication methods. And allowing collaboration with the community on program development and implementation. Recommendation 10-01. Thank you.

**Response:** The U.S. Department of Energy (DOE) thanks you for your attendance at the public meeting and your participation in the public comment process. In 2010, DOE accepted the Site-Specific Advisory Board recommendation 10-1 and awarded a \$500,000 grant to the Voinovich School of Leadership and Public Affairs at the Ohio University to fund a community-driven effort to identify alternatives for the end use of the Portsmouth Gaseous Diffusion Plant. Information from that study, as it applies to this decision, was reflected in DOE's Proposed Plan and preferred remedy selection.

2.51 Comment from Cristy Renner.

Well, I'm Cristy Renner, and I'm going to wear two hats this evening and get it in my little time frame. The one is being an SSAB Board member, and the other one is just to comment as a citizen of this community.

I want to say it's been an honor working with this group. The recommendation that I want to tell you about is recommendation 09-01. It's one of the reasons why I felt honored to work with this group, with some of the things they did.

We had only been with the Board maybe six months, and we had a lot of ups and downs going through, but we also had a goal for this community. We were tired of being left behind when these big corporations would come in onto site and then leave and take the money elsewhere. We wanted more than just a token check at the library, a token check for the fire department.

So we got together in a meeting. It was one of those times where we didn't let the 60-day comment period go through. Dan Minter came running in, saying, "I've got this recommendation. We need to get it in the RFP." The DOE listened to us and they actually – it was in draft form, and they put this recommendation into the RFP, which meant a lot for our community.

I want to touch on the highlights. It was economic development for our community. We knew that we were going to be going in to D&D, and what that meant for the community. But we wanted employment continuity. We wanted a regional purchase program. We wanted community support in the way of funding, scholarships, business grants. You guys heard us and you did that, and you brought several million dollars into the community each year for the life of that RFP. As a group, we thank you for that. Our community thanks you. And when we come to the next RFP in the future, for what our community wants to do, we want to continue and ask DOE to keep that growing inside our proposals, and that that community funding will be there for us.

Through this time, I've been called everything on the Board from baby killer to even being sued because we let junior business, you know, science out at Centrifuge or something. But I have respected and enjoyed and have felt honored to be a part of this group.

Now, as a community member – this is my other hat. In this time, I had to leave my beloved group, and I went out to Missouri, to the Hematite project in St. Louis. I worked out there at Westinghouse at a D&D project. Hematite is half an hour from St. Louis, two hours from Paducah. We have a lot of people from Paducah that I worked with out there.

I was there when Paducah got the call that they were going to be shut down. We have a lot of people, you know, on the bandwagon for Paducah saying, you know, we're going to be shut down. I knew what they were going through. And they found out at the same time that the government funding was going to be cut. They were told that we won't have enough cleanup with you guys, and they got on their little rallying fence and said, you know what, we are a community of 100,000 people. Portsmouth is a rural community of 5,000 people. If you can't afford to clean us up, then shut them down and turn the money over to us.

That scared me. I came back because I got cut with Westinghouse. Found out six months ago that that D&D site actually got closed down, lack of funding. It was partially funded by DOE and by Westinghouse.

But I didn't realize until I came back on the Board that there was a solution. We need to start getting on our bandwagon and start taking responsibility for this community. I believe it was called the Closure Fund, where Fernald, Mound and Rocky Flats got together and went to their representatives and Congress and senators and said, listen, if you give us so-much amount of money that we don't have to budget and beg for every year, we can get this cleanup done in ten years.

So I would like to offer, you know, to my Congressmen and Senators, and anybody else that would like to get together in the community and help me work with somebody, so that we can get that Closure Fund started in our community, so we can group with Paducah instead of letting Paducah take away our funding. We can gather the community and work and get something set in stone for our site. Thank you.

**Response:** The U.S. Department of Energy (DOE) thanks you for your attendance at the public meeting and your participation in the public comment process. Appropriate funding is key to implementing any cleanup program. DOE looks forward to a continued positive working relationship with the Site-Specific Advisory Board as this project proceeds.

2.52 Comment from John E. Hancock.

Dear Kristi,

Kindly remove me from the lists of consultants, notified parties, etc., etc., concerning all matters at the Piketon-Portsmouth facility.

Delete my paper-mail and e-mail addresses from your files, as listed below.

Thank you very much.

Yours sincerely,  
John E. Hancock

**Response:** Your name and contact information has been removed from the notification files.

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**ATTACHMENT 3.1: LIST OF COMMENTERS WHO SUBMITTED COMMENTS  
VIA TEMPLATE LETTER**

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Name	Address	County
<b>Format #1</b>		
Curtis Adkins	2419 Duck Run Road Lucasville, OH 45648	Scioto
William Blevins	1130 Upper Twin Creek Road Blue Creek, OH 45616	Scioto
Brandon Bradshaw	730 Calverts Lane West Portsmouth 45663	Scioto
Kimberly Clark	70 Norfolk Avenue Wheelersburg, OH 45694	Scioto
Dani Coleman	1228 Haig Avenue West Portsmouth, OH 45663	Scioto
Dave Coleman	1228 Haig Avenue West Portsmouth, OH 45663	Scioto
Margaret Coleman	320 Custus Street West Portsmouth, OH 45663	Scioto
Vincent D. Coleman, Sr.	320 Custus Street West Portsmouth, OH 45663	Scioto
Andy Copley	1887 Goose Creek Road Wheelersburg, OH 45694	Scioto
Cathy Copley	1887 Goose Creek Road Wheelersburg, OH 45694	Scioto
Tony Copley	1887 Goose Creek Road Wheelersburg, OH 45694	Scioto
Albert Franklin	19883 State Route 772 Waverly, OH 45690	Pike
Michelle Franklin	19883 State Route 772 Waverly, OH 45690	Pike
Sherrie Halstead	339 Coleman Road West Portsmouth, OH 45663	Scioto
John Howell	1941 Haig Avenue West Portsmouth, OH 45663	Scioto
Peggy Jones	1110 24 <sup>th</sup> Street Portsmouth, OH 45662	Scioto
Angela Kepp	1222 10 <sup>th</sup> Street West Portsmouth, OH 45663	Scioto
Ralph Kepp	1222 10 <sup>th</sup> Street West Portsmouth, OH 45663	Scioto
Derrick Nickell	341 Peat Moss Drive Columbus, OH 43235	Franklin
Phyllis Nickell	312 Valley View Drive Piketon, OH 45661	Piketon
Deanna Drew Phillips	121 Westgate Road West Portsmouth, OH 45663	Scioto
Joseph Roe	223 Hayport Road Wheelersburg, OH 45694	Scioto
Brittany Russell	Peat Moss Drive Columbus, OH 43235	Franklin
Gary Shope	1197 Hiles Road Lucasville, OH 45648	Scioto

Name	Address	County
Kyle Snyder	2776 Dutch Ridge Road Portsmouth, OH 45662	Scioto
Rick Ward	1376 Waldren Hill Road Piketon, OH 45661	Pike
<b>Format #2</b>		
Gary Adkins, Jr.	1192 Phillip Kuhn Road Oak Hill, OH 45656	Jackson
Jason Arnett	1738 Dry Run Road West Portsmouth, OH 45663	Scioto
Mark Bailey	190 North Bennett Avenue Jackson, OH 45640	Jackson
Scott Bauer	198 Briggs Road West Portsmouth, OH 45663	Scioto
John Bennett	1500 Rinehart Road Chillicothe, OH 45601	Ross
Josh Bentley	2400 U.S. Highway 52 Stout, OH 45684	Scioto
Autumn Brooks	1448 Rosemount Road Portsmouth, OH 45662	Scioto
Norman Brooks, Jr.	1448 Rosemount Road Portsmouth, OH 45662	Scioto
Billy Cantrell	1078 Milldale Road Portsmouth, OH 45662	Scioto
Greg Carver	10242 State Route 348 Otway, OH 45657	Scioto
Shaun Caudill	54 Stockham Hill Road West Portsmouth, OH 45663	Scioto
Willie Clark	70 Norfolk Avenue Wheelersburg, OH 45694	Scioto
Ralph Cole	991 Dry Run Road West Portsmouth, OH 45663	Scioto
Tammie Cole	991 Dry Run Road West Portsmouth, OH 45663	Scioto
Kenneth Coleman II	3221 Millers Run Fallen Timber Road Lucasville, OH 45648	Scioto
Kenneth Coleman III	3221 Millers Run Fallen Timber Road Lucasville, OH 45648	Scioto
Sami Jo Coleman	3221 Millers Run Fallen Timber Road Lucasville, OH 45648	Scioto
Susan Coleman	1601 Lester Street West Portsmouth, OH 45663	Scioto
Trevin Coleman	3221 Millers Run Fallen Timber Road Lucasville, OH 45648	Scioto
Mark Crabtree	2322 Arion Road Mc Dermott, OH 45652	Scioto
Joe Delong	1494 Slate Run Road Lucasville, OH 45648	Scioto
Dave Ellis	1250 Normandy Drive Portsmouth, OH 45662	Scioto
Ronald Emmons	3256 Conley Road Lucasville, OH 45648	Scioto



Name	Address	County
Amanda Evans	1601 Lester Street West Portsmouth, OH 45663	Scioto
Jeff Gambill	6989 State Route 73 Otway, OH 45657	Scioto
Dale Grant	4566 Poplar Fork Road Wheelersburg, OH 45694	Scioto
Noah Hall	5192 Rocky Fork Road Otway, OH 45657	Scioto
Adrian Harrison	1061 Dry Run Road West Portsmouth, OH 45663	Scioto
Camilla Harrison	1061 Dry Run Road West Portsmouth, OH 45663	Scioto
Tammie Harrison	1061 Dry Run Road West Portsmouth, OH 45663	Scioto
Michael Hickman	1231 24 <sup>th</sup> Street Portsmouth, OH 45662	Scioto
Justin Howard	240 Morgans Fork Road Waverly, OH 45690	Pike
Jim Howell	1941 Haig Avenue West Portsmouth, OH 45663	Scioto
Jimmy Howell	1941 Haig Avenue West Portsmouth, OH 45663	Scioto
Nelia Hunt	4633 New Rose Avenue Portsmouth, OH 45662	Scioto
Angela Keeton	386 Richard Road Minford, OH 45653	Scioto
Gary Keeton	386 Richard Road Minford, OH 45653	Scioto
Larry J. Keeton	113 Kulp Road Minford, OH 45653	Scioto
Susan Kellogg	132 Milew Drive Ironton, OH 45638	Scioto
Wayne Kellogg	132 Milew Drive Ironton, OH 45638	Scioto
Gladys Lewis	493 Junior Road Ironton, OH 45638	Scioto
Margaret Lewis	118 Custus Street West Portsmouth, OH 45663	(Blank)
Raymond Lewis	493 Junior Road Ironton, OH 45638	Scioto
William E. Lewis, Jr.	118 Custus Street West Portsmouth, OH 45663	Scioto
Robert Masters	P.O. Box 429 Jackson, OH 45640	Jackson
Greg Maynard	904 Slab Run Road West Portsmouth, OH 45663	Scioto
Amy McGuire	74 Coburn Drive Mc Dermott, OH 45652	Scioto
Jake McGuire	74 Coburn Drive Mc Dermott, OH 45652	Scioto
Joseph McGuire	74 Coburn Drive Mc Dermott, OH 45652	Scioto

Name	Address	County
Luke Mcguire	74 Coburn Drive Mc Dermott, OH 45652	Scioto
Randy Mcguire	74 Coburn Drive Mc Dermott, OH 45652	Scioto
Jerry Messer	232 Country Club Drive Mc Dermott, OH 45652	Scioto
Melanie Messer	232 Country Club Drive Mc Dermott, OH 45652	Scioto
Clores Milstead	1117 Washington Boulevard (Fairview Avenue) West Portsmouth, OH 45663	Scioto
Don Milstead	1117 Washington Boulevard (Fairview Avenue) West Portsmouth, OH 45663	Scioto
Randy Mollett	1666 Logan Street Portsmouth, OH 45662	Scioto
Taylor Prince	54 Stockham Hill Road West Portsmouth, OH 45663	Scioto
Terry Roe	223 Hayport Road Wheelersburg, OH 45694	Scioto
Daniel Ross	295 Jones Run Road Otway, OH 45657	Scioto
Delbert Ross	402 Jones Run Road Otway, OH 45657	Scioto
Emily Ross	400 Jones Run Road Otway, OH 45657	Scioto
Kellie Ross	400 Jones Run Road Otway, OH 45657	Scioto
Scott Ross	402 Jones Run Road Otway, OH 45657	Scioto
Steven Ross	400 Jones Run Road Otway, OH 45657	Scioto
Barbara Runyon	55 Private Drive 1068 Ironton, OH 45638	Lawrence
Marlin R. Runyon	861 Township Road 161 South Point, OH 45680	Lawrence
Terry Shope	1197 Hiles Road Lucasville, OH 45648	Scioto
Davy Smith	1254 9 <sup>th</sup> Street West Portsmouth, OH 45663	Scioto
Austin Stephens	1844 Beekman Avenue West Portsmouth, OH 45663	Scioto
Wayne Stewart	1802 Pershing Avenue West Portsmouth, OH 45663	Scioto
Gary Thompson	423 Pleasant Grove Road Jackson, OH 45640	Jackson
Jennifer Throckmorton	1213 8 <sup>th</sup> Street West Portsmouth, OH 45663	Scioto
John Tolliver	1926 Washington Boulevard (Beekman Avenue) West Portsmouth, OH 45663	Scioto
John Weeks	2068 Snook Road Franklin Furnace, OH 45629	Scioto

Name	Address	County
Benjamin Wetta	991 Dry Run Road West Portsmouth, OH 45663	Scioto
Scott Williams	6524 State Route 220 Waverly, OH 45690	Pike
<b>Format #3</b>		
Alex Adams	164 Hoffman Lane Waverly, OH 45690	N/A
Randy Adams	804 Broadway Street Manchester, OH 45144	N/A
Jerry Adkins	8651 State Route 125 West Portsmouth, OH 45663	N/A
John Allen	4136 Mackletree Road Blue Creek, OH 45616	N/A
James Arnett, Jr.	4569 State Route 73 Otway, OH 45657	N/A
Darwin Barnes	2179 Mount Hope Road Otway, OH 45657	N/A
James Barnett, Sr.	1522 Grandview Avenue Portsmouth, OH 45662	N/A
Gary Bennett	417 Stanton Road Lucasville, OH 45648	N/A
Donald Billetter	2867 Dry Run Road West Portsmouth, OH 45663	N/A
Anthony Blanton	10816 State Route 73 Peebles, OH 45660	N/A
Jeff Browning	8724 Sentry Drive Florence, KY 41042	N/A
Mark Cales	1397 Harrison Road Jackson, OH 45640	N/A
Jerry Callihan	137 Crull Street West Portsmouth, OH 45663	N/A
Kelly Carver	1496B State Route 104 Lucasville, OH 45648	N/A
Mike Cassidy	3243 Conley Road Lucasville, OH 45648	N/A
Cole Coleman	1077 Dry Run Road West Portsmouth, OH 45663	N/A
Gary Coleman	1077 Dry Run Road West Portsmouth, OH 45663	N/A
Joseph Coleman	1250 12th Street West Portsmouth, OH 45663	N/A
Kari Coleman	1085 Dry Run Road West Portsmouth, OH 45663	N/A
Kenneth Coleman I	1108 Long Avenue West Portsmouth, OH 45663	N/A
Linda Coleman	1108 Long Avenue West Portsmouth, OH 45663	N/A
Lindy Coleman	1077 Dry Run Road West Portsmouth, OH 45663	N/A
Shella Coleman	1077 Dry Run Road West Portsmouth, OH 45663	N/A

Name	Address	County
Collin Colley	341 Moores Lane West Portsmouth, OH 45663	N/A
Robert Colley	341 Moores Lane West Portsmouth, OH 45663	N/A
Vickie Colley	341 Moores Lane West Portsmouth, OH 45663	N/A
Nicole Conkel	1351 Arion Road Mc Dermott, OH 45652	N/A
Roger Conley	2242 Rose Avenue West Portsmouth, OH 45663	N/A
Chris Craft	580 Dunlap Road Portsmouth, OH 45662	N/A
Cyndelia Craft	715 Dunlap Road Portsmouth, OH 45662	N/A
Stanley S. Craft	715 Dunlap Road Portsmouth, OH 45662	N/A
Linda Delong	23020 State Route 73 Portsmouth, OH 45663	N/A
Jeff Dettwiller	19 Zuefle Drive Mc Dermott, OH 45652	N/A
Breeanna D. Detty	170 Discovery Drive Chillicothe, OH 45601	N/A
Becky Distel	2227 6 <sup>th</sup> Street Portsmouth, OH 45662	N/A
Paula Dyer	1844 Beekman Avenue West Portsmouth, OH 45663	N/A
Jeff Emmons	2810-A Conley Road Lucasville, OH 45648	N/A
Jonathon Evans	1601 Lester Street West Portsmouth, OH 45663	N/A
Loretta Evans	1250 12 <sup>th</sup> Street West Portsmouth, OH 45663	N/A
Paul Evans	5034 Millers Run Back Run Road Lucasville, OH 45648	N/A
Timothy Evans	1601 Lester Street West Portsmouth, OH 45663	N/A
Floyd Ferrell	4426B Poplar Fork Road Wheelersburg, OH 45694	N/A
David Flagg	P.O. Box 281 Lucasville, OH 45648	N/A
David Flagg	1747 Van Crabtree Road Lucasville, OH 45648	N/A
Marvin Folden	2309 Smith Bridge Road Jackson, OH 45640	N/A
Rick Golden	10462 State Route 104 Lucasville, OH 45648	N/A
Greg Guilkey	188 Turkey Run Road Waverly, OH 45690	N/A
Nick Hadsell	2040 High Street Portsmouth, OH 45662	N/A
Noah Hall	5192 Rocky Fork Road Otway, OH 45657	N/A

Name	Address	County
Daniel Halstead	339 Coleman Road West Portsmouth, OH 45663	N/A
David Halstead	339 Coleman Road West Portsmouth, OH 45663	N/A
Jacob Halstead	339 Coleman Road West Portsmouth, OH 45663	N/A
Brittany Havens	771 Rases Mountain Drive Minford, OH 45653	N/A
Gabe Havens	771 Rases Mountain Drive Minford, OH 45653	N/A
Barb Henderson	1004 Goose Creek Road Wheelersburg, OH 45694	N/A
Carl Henderson	1004 Goose Creek Road Wheelersburg, OH 45694	N/A
John Howard	240 Morgans Fork Road Waverly, OH 45690	N/A
Jeremy Hughes	102 Highland Drive Sciotoville, OH 45662	N/A
Sam Jenkins	10236 State Route 124 Piketon, OH 45661	N/A
Jack B. Jones	1110 24 <sup>th</sup> Street Portsmouth, OH 45662	Scioto
Keri Journey	1332 12 <sup>th</sup> Street West Portsmouth, OH 45663	N/A
Pam Journey	425 Odle Creek Road West Portsmouth, OH 45663	N/A
Scott Journey	425 Odle Creek Road West Portsmouth, OH 45663	N/A
Tanner Journey	425 Odle Creek Road West Portsmouth, OH 45663	N/A
Tara Journey	425 Odle Creek Road West Portsmouth, OH 45663	N/A
Travis Journey	1332 12 <sup>th</sup> Street West Portsmouth, OH 45663	N/A
Tyler Journey	425 Odle Creek Road West Portsmouth, OH 45663	N/A
Bill Lewis, Sr.	118 Custus Street West Portsmouth, OH 45663	N/A
Chad Lewis	130 Dusty Drive Mc Dermott, OH 45652	N/A
Kevin Lewis	130 Dusty Drive Mc Dermott, OH 45652	N/A
Tommy Lore	4933A Poplar Fork Road Wheelersburg, OH 45694	N/A
Robert D. Maynard	459 Franklin Hollow Road Franklin Furnace, OH 45629	N/A
Carol McGraw	1376 4 <sup>th</sup> Street West Portsmouth, OH 45663	N/A
Diane McGraw	2114 Russell Avenue West Portsmouth, OH 45663	N/A
James E. McGraw	2114 Russell Avenue West Portsmouth, OH 45663	N/A

<b>Name</b>	<b>Address</b>	<b>County</b>
Rachael McGraw	1376 4 <sup>th</sup> Street West Portsmouth, OH 45663	N/A
Ryan J. McGraw	1376 4 <sup>th</sup> Street West Portsmouth, OH 45663	N/A
Lawrence Mershon	260 Coburn Drive Mc Dermott, OH 45652	N/A
Valerie Morris	339 Coleman Road West Portsmouth, OH 45663	N/A
Stephen Muncy	3384 State Route 139 Portsmouth, OH 45662	N/A
Fred Nichols	4706 Rocky Fork Road Otway, OH 45657	N/A
Cecil Nickell	312 Valley View Drive Piketon, OH 45661	N/A
James M. Nickell	30 Meadow Run Road Waverly, OH 45690	N/A
Steve Nickell	313 Apel Road Franklin Furnace, OH 45629	N/A
Vicki L. Nickell	313 Apel Road Franklin Furnace, OH 45629	N/A
Vickie Nickell	30 Meadow Run Road Waverly, OH 45690	N/A
Brittany Osborne	82 Gervais Road Franklin Furnace, OH 45629	N/A
Franklin S. Osborne, Jr.	82 Gervais Road Franklin Furnace, OH 45629	N/A
Dorothy Piatt	99 Piatt Road West Portsmouth, OH 45663	N/A
Heath Piatt	108 Piatt Road West Portsmouth, OH 45663	N/A
Mickey J. Prose	11373 State Route 348 Lucasville, OH 45648	N/A
Sonny Puckett	P.O. Box 35 Mc Dermott, OH 45652	N/A
Chris Rachford	216 Mercer Cox Road Lucasville, OH 45648	N/A
Anthony Raines	1324 Holmes Avenue Portsmouth, OH 45662	N/A
Matt Rhodes	1669 Keystone Road Vinton, OH 45686	N/A
Terry Roe	223 Hayport Road Wheelersburg, OH 45694	N/A
Dave Roney	2134 Shyville Road Piketon, OH 45661	N/A
Dwayne Runyon	55 Private Drive 1068 Ironton, OH 45638	N/A
Dennis Sadler	733A Briggs Road Wheelersburg, OH 45694	N/A
Joyce Sadler	733A Briggs Road Wheelersburg, OH 45694	N/A

Name	Address	County
Ricky Shope	174 Fairview Boulevard Circleville, OH 43113	N/A
Andy Sparks	43 Brouse Street West Portsmouth, OH 45663	N/A
Emily Sparks	34 Moores Lane West Portsmouth, OH 45663	N/A
Eric Sparks	34 Moores Lane West Portsmouth, OH 45663	N/A
Jody Sparks	34 Moores Lane West Portsmouth, OH 45663	N/A
Beth Spriggs	948 Orange Street Chillicothe, OH 45601	N/A
John Spriggs	948 Orange Street Chillicothe, OH 45601	N/A
Maddix Spriggs	1351 Arion Road McDermott, OH 45652	N/A
Walter Spriggs	1351 Arion Road McDermott, OH 45652	N/A
Stacie Stephens	1844 Beekman Avenue West Portsmouth, OH 45663	N/A
Gregory T. Stepp	3344 Churn Creek Road Blue Creek, OH 45616	N/A
Roger K. Thornberry	66 Greenwood Drive Lucasville, OH 45648	N/A
Josh Throckmorton	11748 State Route 348 Lucasville, OH	N/A
Larry Vanhooose	1 Shawnee Lane Lucasville, OH 45648	N/A
William W. Walette	134 Valley View Drive Waverly, OH 45690	N/A
Gary Weber	1152 Rainbow Drive Portsmouth, OH 45662	N/A
James Welch	651 Careys Run Road West Portsmouth, OH 45663	N/A
Scott Welch	1306 2 <sup>nd</sup> Street West Portsmouth, OH 45663	N/A
Danny Wheelersburg	690 Country Club Drive Mc Dermott, OH 45652	N/A
William Yazell	1863 Bloom Furnace Road South Webster, OH 45682	N/A
<b>Format #4</b>		
David Keeney	1811 High Street Portsmouth, OH 45662	Scioto
Gregory Keeney	1811 High Street Portsmouth, OH 45662	Scioto
Hilary Koch	8606 Big Bear Creek Road Lucasville, OH 45648	Scioto
Jared Koch	8606 Big Bear Creek Road Lucasville, OH 45648	Scioto
Jennifer Montgomery	19883 State Route 772 Waverly, OH 45690	Pike

Name	Address	County
John Montgomery	19883 State Route 772 Waverly, OH 45690	Pike
Glenn Nickell	19566 State Route 772 Waverly, OH 45690	Pike
Sharon Nickell	19566 State Route 772 Waverly, OH 45690	Pike
<b>Format #5</b>		
Jack B. Allberry	P.O. Box 80 36105 Faith Road Union Furnace, OH 43158	N/A
Mark A. Anderson	2225 Crab Tree Drive Beavercreek, OH 45431	N/A
Shawn Anderson	1410 Holly Avenue Dayton, OH 45410	N/A
Lorraine Artis	5728 Hunter Avenue Cincinnati, OH 45212	N/A
Will B. Artis, Jr.	5728 Hunter Avenue Cincinnati, OH 45212	N/A
William T. Ashmore III	9727 Elm Tree Road Waynesville, OH 45068	N/A
William N. Bailey, Sr.	1503 Kenova Avenue Cincinnati, OH 45237	N/A
Garold R. Baker	275 Yellowtown Road Patriot, OH 45658	N/A
Jason D. Baker	9209 Pittsburg Laura Road Arcanum, OH 45304	N/A
Tony Barber	4571 Gladys Road Lynchburg, OH 45142	N/A
Jamal Basit	3193 Norwood Street Apartment D Columbus, OH 43224	N/A
Randy Baugh	424 West Washington Street Greensburg, IN 47240	N/A
Marilyn Beatty	4139 Five Points Road Jackson, OH 45640	N/A
Ralph Beatty	4139 Five Points Road Jackson, OH 45640	N/A
Kenneth A. Beveridge	922 Merkle Avenue Marion, OH 43302	N/A
Charles Bing	7886 Waggoner Run Drive Blacklick, OH 43004	N/A
Charles Birch	3652 Brooks Avenue Cincinnati, OH 45207	N/A
Donald R. Black	7245 Singer Road Dayton, OH 45424	N/A
Michael D. Black	2440 West Charleston Road Tipp City, OH 45371	N/A
Larry Bodner	5900 Ivystone Court Dublin, OH 43016	N/A
Craig Bowen	24076 Mountain Bell Road Coolville, OH 45723	N/A



Name	Address	County
Declan Boyd	5448 Idlewood Road Dayton, OH 45432	N/A
Troy Boyd	6716 Prior Road Nashport, OH 43830	N/A
John F. Branstool	2420 Debolt Road Utica, OH 43080	N/A
Michael W. Brewer	6035 Gratis Road Camden, OH 45311	N/A
Nathaniel Brice	1337 Randomhill Road Cincinnati, OH 45231	N/A
Thomas W. Brown	2834 State Route 232 Bethel, OH 45106	N/A
Emily S. Brubaker	4910 Woodman Park Drive #3 Dayton, OH 45432	N/A
Stanley E. Brubaker	4910 Woodman Park Drive #3 Dayton, OH 45432	N/A
Kendall Budd	4813 Kleeman Green Drive Cincinnati, OH 45211	N/A
Zachary Budd	4813 Kleeman Green Drive Cincinnati, OH 45211	N/A
Dennis L. Burns	1895 Parrish Avenue Hamilton, OH 45011	N/A
Thomas P. Byers	356 Clinton Drive Heath, OH 43056	N/A
Frank Byrne	1436 Collinsdale Cincinnati, OH 45230	N/A
Eric Campbell	10901 Jug Street Johnstown, OH 43031	N/A
Marcia Campbell	2127 Wayne Avenue Middletown, OH 45044	N/A
Edward Chesnut	184 Howman Avenue Hamilton, OH 45011	N/A
Lisa Kaye Clevenger	2645 Fairlane Drive Wheelersburg, OH 45694	N/A
Stephen R. Coghlan	1124 Lexington Avenue Fairborn, OH 45324	N/A
Lawrence M. Colonel	P.O. Box 364 New Richmond, OH 45157	N/A
David Conrad	903 Seborn Avenue Zanesville, OH 43701	N/A
Michael A. Cooper	13785 State Route 374 Rockbridge, OH 43149	N/A
Roger Cornelius	7204 Thompson Road Goshen, OH 45122	N/A
David W. Couch	92 Stonyridge Drive Cold Spring, KY 41076	N/A
Brandon Cox	1180 Northridge Road Columbus, OH 43224	N/A
Jacob Crapyou	1820 Coles Boulevard Portsmouth, OH 45662	N/A
Dave Creek	4480 East Miami River Road Cleves, OH 45002	N/A

<b>Name</b>	<b>Address</b>	<b>County</b>
Robert M. Cuffe	8692 Beckys Ridge Drive Cincinnati, OH 45251	N/A
Russell Cummins	5548 County Road 13 Bellefontaine, OH 43311	N/A
Charles R. Daley	41 Jeremy Court Pataskala, OH 43062	N/A
Robert D. Davidson	27601 Narrows Road South Bloomingville, OH 43152	N/A
Maurice M. Davis, Jr.	4250 Soldiers Home Miamisburg Road Miamisburg, OH 45342	N/A
Brian A. Dean	1455 Keiser Road Waverly, OH 45690	N/A
Jennifer Denney	7727 Delview Drive West Chester, OH 45069	N/A
Harold R. Dick	1155 Alton Road Galloway, OH 43119	N/A
Shirley A. Dick	1155 Alton Road Galloway, OH 43119	N/A
Bret Dillow	160 Josephine Drive Wheelersburg, OH 45694	N/A
Treicko D. Driggers	P.O. Box 314 Peebles, OH 45660	N/A
C. A. Duncan	1765 State Route 314 Crestline, OH 44827	N/A
Scott Fanning	3224 Harrison #2 Cincinnati, OH 45211	N/A
Joe Fantetti	1179 Pride Hill Road Hamersville, OH 45130	N/A
Matthew Faulkner	4426 Arcadia Boulevard Dayton, OH 45420	N/A
Carolyn Fearn	13413 Montgomery Road Fredericktown, OH 43019	N/A
James D. Finney	10488 U.S. Route 127 Camden, OH 45311	N/A
Josh Foltz	5667 Gatewater Boulevard New Albany, OH 43054	N/A
Thomas E. Freier	2804 Harvey Avenue Kettering, OH 45419	N/A
Casey J. Friedlander	202 Clara Drive Trenton, OH 45067	N/A
Bobby Fritz	1417 Bonser Avenue Portsmouth, OH 45662	N/A
Justin Gabbard	225 Moder Drive Monroe, OH 45050-1540	N/A
Emily S. Gardner	2096 State Route 551 Waverly, OH 45690	N/A
Michael R. Gardner	2096 State Route 551 Waverly, OH 45690	N/A
Phillip J. Gardner	8585 Cheshire Road Sunbury, OH 43074	N/A
Aaron Graham	107 Sandhurst Drive Dayton, OH 45405	N/A

Name	Address	County
Lee Granger	1760 Case Road Columbus, OH 43224	N/A
Dan Grant	7962 Snider Road Mason, OH 45040	N/A
Greg Greenlee	961 State Route 850 Bidwell Ohio 45614	N/A
Kevin W. Greiner	8735 Ridgley Road Mount Perry, OH 43760 Box 171 Glenford, OH 43739	N/A
Marlene A. Griffin	1117 East 13 <sup>th</sup> Columbus, OH 43211	N/A
Joseph V. Grispingo	12666 Wheaton Avenue Pickerington, OH 43147	N/A
Charles A. Haitz	6490 Ripley Day Hill Road Ripley, OH 45167	N/A
Joseph P. Hall	7889 State Route 29 De Graff, OH 43318	N/A
Virginia Hall	7889 State Route 29 De Graff, OH 43318	N/A
Cathy Hannah	238 North Ogden Avenue Columbus, OH 43204	N/A
James Harble	3260 London Hollow Road Newark, OH 43055	N/A
Jordan Harble	3260 London Hollow Road Newark, OH 43055	N/A
Stacey Harlan	3057 Stonebluff Drive Columbus, OH 43232	N/A
Gerald L. Hart	32623 State Forest Road McArthur, OH 45651	N/A
Royden Hawkins	37896 State Route 124 Pomeroy, OH 45769	N/A
Roger Heider	5897 Belfast Road Batavia, OH 45103	N/A
Michael R. Henderson	37160 State Route 56 New Plymouth, OH 45654	N/A
Richard Herold	338 Westlawn Drive Ontario, OH 44906	N/A
Dave Hibbard	568 Charlberth Drive Millville, OH 45013	N/A
Karla Hill	527 Betton Street Cincinnati, OH 45214	N/A
Jeremy Hinkle	3516 County Road 20 Cardington, OH 43315	N/A
John P. Hobbs, Jr.	2072 Dooley Square Drive Grove City, OH 43123	N/A
David Humphrey	6658 Netherland Drive Liberty Township, OH 45044	N/A
Mike Hupp	24425 Holycross Epps Road Marysville, OH 43040	N/A
David C. Hurd	165 Cackley Road Oak Hill, OH 45656	N/A

Name	Address	County
Polly A. Hurd	165 Cackley Road Oak Hill, OH 45656	N/A
Thomas R. Hyme	8461 West Bowling Green Lane NW Lancaster, OH 43130	N/A
David A. Ingles	491 Wiseman Road Patriot, OH 45658	N/A
DeAndrew L. Jackson, Sr.	354 North 11 <sup>th</sup> Street Hamilton, OH 45011	N/A
Dennis Johnson	188 Sassy Lane Greenup, KY 41144	N/A
Michael Jones	1331 Shinkle Ridge Road Georgetown, OH 45121	N/A
Brian K. Karr	17256 State Route 327 Laurelville, OH 43135	N/A
Brad Keener	9540 Martinsburg Road St. Louisville, OH 43071	N/A
Gregory A. Kingsbury	4662 Heatherblend Court Grove City, OH 43123	N/A
William A. Kleine	2506 Cosmos Drive Loveland, OH 45140	N/A
Joni Kreitzer	1408 Ohmer Avenue Dayton, OH 45410	N/A
Albert L. Kroger, Jr.	952 Paxton Lake Drive Loveland, OH 45140	N/A
Mike Lane	6134 Todhunter Road Middletown, OH 45044	N/A
Donn Larck	8860 State Route 521 Sunbury, OH 43074	N/A
Victor Lee	P.O. Box 1132 Mason, OH 45040	N/A
Robert Lehner	4100 Kimberly Drive Kettering, OH 45429	N/A
Nick Leppert	705 Runyon Lane Nelsonville, OH 45764	N/A
Timothy J. Lewis	3574 Starling Road Bethel, OH 45106	N/A
Brad Linden	1047 East Sixth Avenue Lancaster, OH 43130	N/A
Kevin Lloyd	5063 Township Road 211 Marengo, OH 43334	N/A
Michele A. Long	2644 Springmont Avenue Dayton, OH 45420	N/A
James R. Luman	9476 Five Points Fincastle Road Sardinia, OH 45171	N/A
Henry F. Lung, Jr.	3736 Todds Run Foster Road Williamsburg, OH 45176	N/A
Scott J. Mackenzie	3244 Cedarwood Road Fairborn, OH 45324	N/A
Douglas E. Maddy	2970 Water Street Zanesfield, OH 43360	N/A
Lee F. Mann	807 McNaughten Road Columbus, OH 43213-2148	N/A

<b>Name</b>	<b>Address</b>	<b>County</b>
Rick Markesbery	2585 Berwood Lane Hebron, KY 41048	N/A
Brandon Markey	9885 Dalzell Road Lower Salem, OH 45745	N/A
Gary M. Marsh	1027 Rivermeade Drive Hebron, KY 41048	N/A
Steven Mast	5582 Big Timber Court Columbus, OH 43230	N/A
George T. McDaniel	71 Alta Vista Drive Walton, KY 41094	N/A
Steven McGowan	81 Taft Street Jackson, OH 45640	N/A
Thomas McMillan	669 Greenwood Avenue Cincinnati, OH 45229	N/A
Mary Meadows	7747 Dry Run Road Kingston, OH 45644	N/A
Jason Meeks	6988 Panther Drive Liberty Township, OH 45044	N/A
Jacquelyn J. Merical	5662 State Route 7 South Gallipolis, OH 45631	N/A
Jimmy Meyer	7840 Finley Lane Cincinnati, OH 45242	N/A
Kathy J. Michael	2596 Erwin Road Jackson, OH 45640	N/A
John Mills	8876 State Route 227 Camden, OH 45311	N/A
Joseph A. Mitchell	961 County Line Road Hopewell, OH 43746	N/A
Christy Mohler	6509 Miller Siding Road Rushville, OH 43150	N/A
Ralph Mohler, Jr.	6509 Miller Siding Road NE Rushville, OH 43150	N/A
Stasi A. Moore	19710 Fierce Ridge Road Glouster, OH 45732	N/A
Michael L. Motter	7206 Chatlake Drive Huber Heights, OH 45424	N/A
John R. Mount	3008 Drewersburg Road West Harrison, IN 47060	N/A
Keith Nader	251 Mill Street Duncan Falls, OH 43734	N/A
James Neff	P.O. Box 355 Adelphi, OH 43101	N/A
James H. Neff	4575 Tealtown Road Batavia, OH 45103	N/A
Clarence Norman	2036 Lenmary Road West Harrison, IN 47060	N/A
Mick North	2700 Forest Retreat Road SE Lancaster, OH 43130	N/A
Ismael Olivas	15307 Madison Pike Morning View, KY 41063	N/A
Tim Parsley	4315 County Road 15 Marengo, OH 43334	N/A

Name	Address	County
Victor J. Paul	8539 State Route 555 NW Crooksville, OH 43731	N/A
Forest R. Peck	401 South Pearl Street Covington, OH 45318	N/A
Terry L. Peters	2820 Davis Road Bethel, OH 45106	N/A
Jeff Powell	2118 Hathaway Road Union, KY 41091	N/A
Bradley Prickett	137 West Union Street Circleville, OH 43113	N/A
Brian Prince	5551 Hamilton Richmond Road Hamilton, OH 45013	N/A
Zachary Quinter	1810 Langview Drive Fairborn, OH 45324	N/A
William F. Quisenberry	P.O. Box 538 Saint Paris, OH 43072	N/A
Jerome M. Rader, Jr.	24099 Mountain Bell Road Coolville, OH 45723	N/A
Jeff Randall	6865 Alloway Street East Worthington, OH 43085	N/A
Stephen P. Ranft	9421 Winchester Road Groveport, OH 43125	N/A
Howard Reed	15228 Portie Flamingo Road SE Corning, OH 43730	N/A
Adam Reese	2165 Fairview Road SE Bremen, OH 43107	N/A
Rich Reynolds	714 Spinning Road New Carlisle, OH 45344	N/A
Christopher Richardson	1308 Michigan Avenue Middletown, OH 45044	N/A
Christine A. Robinson	1233 Hemlock Drive Fairborn, OH 45324	N/A
Mary J. Robinson	1937 Wood Road Lebanon, OH 45036	N/A
Patrick J. Rockett	101 South Columbus Street Sunbury, OH 43074	N/A
Jeffery Q. Romine	5601 Grumms Lane NE Newark, OH 43055	N/A
Niko Russell	1555 Linwood Avenue Columbus, OH 43207	N/A
John Schemrich	7044 Seeds Road Orient, OH 43146	N/A
Wayne Scherrer	2930 Catawba Road Falmouth, KY 41040	N/A
Loreal Schul	7787 Old Dayton Road Dayton, OH 45417	N/A
Addie L. Scott	1871 Fairfax Avenue Cincinnati, OH 45207	N/A
Henry J. Scott, Jr.	2470 Horning Drive Fairfield, OH 45014	N/A
Larry O. Scott	2206 May Street Cincinnati, OH 45206	N/A

<b>Name</b>	<b>Address</b>	<b>County</b>
Robert L. Seman	2644 Springmont Avenue Dayton, OH 45420	N/A
Gregory H. Shultz	127 Ogden Road Wilmington, OH 45177	N/A
Kurt Simmons	4719 Marysville Road Delaware, OH 43015	N/A
Michael R. Simonds	7292 Wethersfield Drive West Chester, OH 45069	N/A
James Singleton	6725 Smith Road Loveland, OH 45140	N/A
Brian Sizemore	1 Juarez Circle Covington, KY 41017	N/A
Anthony Smith	1206 Heritage Drive Troy, OH 45373	N/A
Craig Smith	807 Luck Avenue Zanesville, OH 43701	N/A
Jim Sorrell	3525 Hooper Road NE McConnelsville, OH 43756	N/A
Samantha Sterling	11591 Old Riley Road Frazesburg, OH 43822	N/A
Scott R. Stevenson	4352 Honey Locust Lane Beavercreek, OH 45432	N/A
Wendy Stone	985 Quincy Road Letart, WV 25253	N/A
Robert L. Stringer, II	3424 Napanee Drive Beavercreek, OH 45430	N/A
Bonnie Styer	1185 Lancaster Avenue Reynoldsburg, OH 43068-2131	N/A
Robert W. Styer	1185 Lancaster Avenue Reynoldsburg, OH 43068-2131	N/A
Edward Swaggerty, Jr.	271 Dana Avenue Columbus, OH 43223	N/A
Gary R. Swartz	3890 Jacksonburg Road Hamilton, OH 45011-9660	N/A
Tommy N. Thompson	1109 Tiffany Drive Reynoldsburg, OH 43068-1706	N/A
Peter Tomlin	5065 Marietta Avenue Buchtel, OH 45716	N/A
Andrew P. VanBuren	3150 Hamburg Road SW Lancaster, OH 43130	N/A
Ashley VanBuren	6974 Hopewell Church Road Lancaster, OH 43130	N/A
Ferrell A. Vanwy	204 Fern Street Newark, OH 43055	N/A
Kathy Vanwy	204 Fern Street Newark, OH 43055	N/A
Jamey Vincent	3866 Church Street New Marshfield, OH 45766	N/A
Steve Walker	75 Penick Avenue Delaware, OH 43015	N/A
Jimmie Wallace	75 Duck Run Mc Dermott, OH 45652	N/A

<b>Name</b>	<b>Address</b>	<b>County</b>
Westley Walters	7705 Dayton Germantown Pike Germantown, OH 45327	N/A
Mike Ward	7565 Tarlton Road Circleville, OH 43113	N/A
Pamela S. Warga	8606 Loudon Street Johnstown, OH 43031	N/A
Pete Warga	8606 Loudon Street Johnstown, OH 43031	N/A
Jeremy T. Warner	4625 Township Road 186 SW Junction City, OH 43748	N/A
Dalton Welch	4772 Waterloo Road Canal Winchester, OH 43110	N/A
Daniel Welz	2332 Bethel Hygiene Road Bethel, OH 45106	N/A
Thomas A. Wiggins, Jr.	259 Western Avenue Chillicothe, OH 45601	N/A
Devin Wilkins	8350 Center Road Philo, OH 43771	N/A
Philip Williams	232 Aaron Road Portsmouth, OH 45662	N/A
Tammy Williams	2534 Hansford Place, Apt. 1 Cincinnati, OH 45214	N/A
Charles J. Willis	2517 Edsel Avenue Columbus, OH 43207	N/A
John M. Willis	1357 Donwalter Lane Columbus, OH 43235	N/A
Kerrick D. Wilson	14720 State Route 122 Somerville, OH 45064	N/A
Christlyn A. Wolfe	253 North Mulberry Street Logan, OH 43138	N/A
Matthew Woods	1510 Hickle Road Frankfort, OH 45628	N/A
Nancy Woods	12151 State Route 56 Mechanicsburg, OH 43044	N/A
Ryan Yantes	23121 Buena Vista Road Rockbridge, OH 43149	N/A
Dencil R. Yost, Jr.	786 Meadowlane Road Vinton, OH 45686	N/A
Michael E. Young	1861 Turnbull Road Beavercreek, OH 45432	N/A
Tom Zumbro	15880 Kreashbaum Road Rockbridge, OH 43149	N/A



**ATTACHMENT 3.2: PREVIOUS PETITION SIGNATURES**

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### Petition against the Proposed Onsite Disposal Cell at the DOE Site in Piketon, OH

**Petition Summary:** The Department of Energy, Pike County Commissioners, Environmental Protection Agency and Fluor B&W, Portsmouth, LLC are considering an Onsite Disposal Cell at the DOE Site in Piketon, OH.

**Action Petitioned For:** We the undersigned are completely against having an Onsite Disposal Cell and we are urging our elected officials to act now and stop the Onsite Disposal Cell.

	Date	Signature	Printed Name	Address	Comment
1	12/17/11		Amy Ruppert	2626 Shawville Rd Apt. 33 Piketon, Ohio 45661	
2	12/17/11		Tabitha Spencer	1018 Lumbler Ave Road Piketon, Ohio 45661	
3	12-17-11		STEPHANIE IRVINE	538 Schuster Rd Piketon Ohio 45661	
4	12-17-11		JAMES D. Rigsby	42 Main St Waverly Ohio 45690	
5	12-17-11		James J. Davis	108 Skyline Dr. Waverly, Ohio 45690	No + Hell NO!
6	12-17-11		David Bunriss	530 Maple Ave Piketon	
7	12-17-11		ADAM JONES	3618 Bear Creek Dr Waverly OH 45690	
8	12-17-11		Matt McAllister	108 Columbia Dr. Waverly, OH 45690	
9	12-17-11		Steve Grimes	131 Columbia Dr Waverly Ohio 45690	
10	12-17-11		Aaron Wolfe	2309 Rocky Rd Chillicothe Ohio 45601	
11	12-17-11		ED Roberts	112 Koechle Hill Rd.	

### Petition against the Proposed Onsite Disposal Cell at the DOE Site in Piketon, OH

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	Date	Signature	Printed Name	Address	Comment
12	12-18-11	<i>Joshua D. Havers</i>	Joshua D. Havers	1145 Bobo Rd Beaver, OH	Absolutely not
13	12-18-11	<i>Teresa Meeks</i>	Teresa Meeks	8080 RD 1145 Beaver Ohio	NO WAY
14	12/22/11	<i>Elizabeth Lamunon</i>	Elizabeth Lamunon	505 Bobo Rd. Beaver, OH	
15	12/22/11	<i>Michael G. Beekman</i>	Michael G. Beekman	303 Bobo Rd Beaver, OH	
16	12/22/11	<i>Donna E. Beekman</i>	Donna E. Beekman	303 Bobo Rd Beaver, Ohio	
17	12/22/11	<i>David M. Beekman</i>	DAVID M. BEEKMAN	646 MILLERS LN WAVERLY, OH 45680	
18	12/22/11	<i>Jeremy Fritz</i>	Jeremy Fritz	167 Zimmerman Rd Piketon, OH 45657	
19	12-22-11	<i>Kathy Zimmerman</i>	Kathy Zimmerman	167 Zimmerman Rd Piketon, OH 45657	
20	12/22/11	<i>Ashley Higginbotham</i>	Ashley Higginbotham	167 Zimmerman Rd Piketon, Ohio 45657	
21					

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	Date	Signature	Printed Name	Address	Comment
22	12/15/11	<i>Gravin Gilbert</i>	Gravin Gilbert	915 US Rt 15 WAVERLY	
23	12/15/11	<i>Fiorietta Bryant</i>	Fiorietta Bryant	222 WADSWORTH WAVERLY, OH	
24	12/15/11	<i>Ronald E. Bryant</i>	RONALD BRYANT	222 WADSWORTH WAVERLY, OH	
25	12/19/11	<i>George A. Thedall</i>	George A. Thedall	1352 WILKINSON RD BEAVER OH 45613	
26	12/19/11	<i>Clayton C. Kilbmaster</i>	CLAYTON C. KILMASTER	107 PIKE ST WAVERLY, OH	
27	12-19-11	<i>Teresa J. Putnam</i>	Teresa J. Putnam	1370 Bobo Road Beaver, OH 45613	
28	12-19-11	<i>Robert P. Putnam</i>	Robert P. Putnam	1370 Bobo Road Beaver, OH 45613	
29	12-19-11	<i>Blake L. Havens</i>	Blake Havens	1251 Bobo Rd Beaver OH 45613	
30	12-19-11	<i>Reba L. Havens</i>	Reba L. Havens	255 FORTUNE WAVERLY OH	
31	12-19-11	<i>Cara Havens</i>	Cara Havens	1147 Bobo Rd Beaver, OH 45613	
32	12-19-11	<i>Blair Taylor</i>	Blair Taylor	1147 Bobo Rd Beaver, OH 45613	
33	12-19-11	<i>Robert L. Havens</i>	ROBERT L. HAVENS	1147 BOBO RD BEAVER, OH 45613	PLEASE RECONSIDER FOR THE HEALTH AND WELFARE OF OUR COMMUNITY

### Petition against the Proposed Onsite Disposal Cell at the DOE Site in Piketon, OH

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	Date	Signature	Printed Name	Address	Comment
34	12-23-11	<del>W. L. M. Varney</del>	W. L. M. VARNEY	1087 Loop Rd	
35	12-23-11	Dennis E Varney	DENNIS VARNEY	1087 Loop Rd	
36	12-23-11	Greg Varney	Greg Varney	1087 Loop Rd	
37	12-23-11	Elizabeth Little	Elizabeth Little	787 Loop Rd.	
38	12-23-11	C.D. Clark	C.D. CLARK	747 Loop Rd.	
39	12-23-11	Ron Braumfield	RON BRAUMFIELD	551 Loop Rd.	
40	12-23-11	Sandy Braumfield	SANDY BRAUMFIELD	551 Loop Rd	
41	12-23-11	Steve Harnish	STEVE HARNISH	586 Schuster Rd.	
42	12-23-11	L. Lamerson	Larry Lamerson	2600 Schuster Rd.	
43	12-31-11	J. Lamerson	JEAN LAMERSON	3600 Schuster Rd	
44	12-31-11	Carol Hines	CAROL HINES	Beaver Ohio 6169 Rt 335	
45	12-31-11	Ronald Hines	RONALD HINES	Beaver Ohio 6169 Rt 335	



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	Date	Signature	Printed Name	Address	Comme
1	1-12-2012	Robert Roberts	Robert Roberts	310 E. Second St, Piketon, OH	
2	1-12-12	Mike Valentino	Mike Valentino	158 Wadsworth Ave. Waverly, OH	
3	1-12-12	Kathy Hoggard	KATHY HOGGARD	781 Inlow Ave.; Peebles, OH	
4	1-12-12	Joe Haydon	JOE HAYDON	2173 CHAD RD DAK HILL, OH	
5	1-12-12	Sam Schoett	Sam Schoett	PINE HILL LANE 234 WEST PORTSMOUTH, OHIO	
6	1-12-12	Eric Castle	Eric Castle	1378 Back St. Kaden, OH	
7	1-12-12	JAMES JAMES BEATTY	JAMES BEATTY	600 Laurel St Chillicothe Ohio	
8	1/12/12	Rhonda Ward	Rhonda Ward	26 Rose Pl. Piketon, OH.	
9	1/12/12	Danny Moore	DANNY MOORE	2582 SR 772 LATHAM OH 45671	
10	1-12-12	Danny Satterfield	DANNY SATTERFIELD	6265 St. Rt. 124 LATHAM OH 45646	
11	1/12/12	THOMAS J LONG	THOMAS J LONG	307 E. 4th St. Waverly, OH 45690	

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	Date	Signature	Printed Name	Address	Comment
12	1-12-12	<i>Gary Setty</i>	GARY SETTY	4324 St. Rt. 781 Peebles, OH 45660	
13	1-12-12	<i>Rebecca Setty</i>	REBECCA SETTY	4324 St. Rt. 781 Peebles, OH 45660	
14	1-12-12	<i>Ray McGinnis</i>	RAY MCGINNIS	292 Taylors Hill Rd., Mansfield OH 45663	
15	1-12-12	<i>Dave O'Dell</i>	DAVE O'DELL	387 Pine Lane Lucasville, Ohio 45640	
16	1-12-12	<i>Eric Weber</i>	ERIC WEBER	1208 Weber Rd Jackson, Ohio 45640	
17	1-12-12	<i>Heath Adrian</i>	Heath Adrian	5000 Forest Hill Blvd. Waverly Ohio 45690	
18	1-12-12	<i>Joe Jennings</i>	Joe Jennings	4292 Pleasant Hill Rd Waverly, Ohio 45690	
19	1-12-12	<i>Gary Fitzpatrick</i>	GARY FITZPATRICK	66 McGowney Rd Stant, Oh. 45681	
20	1-12-12	<i>Michael T. Gadd</i>	MICHAEL T. GADD	6480 ST RT 348 STDAY, OH 45657	
21	1-12-12	<i>Jeffrey W. Copley</i>	JEFFREY W. COPLEY	2159 ADAMS ROAD BEAVER, OHIO 45613	



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	Date	Signature	Printed Name	Address	Comment
22	1-12-2012	Gary Douthat	GARY DOUTHAT	143 DOUTHAT Rd PORTSMOUTH	DON'T WANT IT
23	1-12-2012	Rodney Montgomery	Rodney Montgomery	8045 Roswell Rd. Piketon OH	✓
24	1-12-2012	TW Montavon	TW MONTAVON	75 SIMON MILLER WHEELERSBURD	✓
25	1-12-2012	Ray Weeks	RAY WEEKS	134 OAKWOOD Lane Westerville OH 43081	✓
26	1-12-2012	Walter Fauth	Walter Fauth	3088 Barkel Road Ray, Ohio 45672	✓
27	1-12-2012	Donald K. Shook	Donald K Shook	1108 Dewey East Rd Lucasville OH 45648	✓
28	1-12-2012	John J. Allen	John J. Allen	6584 Egypt Pike Chillicothe Ohio 45601	✓
29	1-12-2012	David Setty	DAVID SETTY	311A ST. RT. 348 OTWAY OH 45657	✓
30	1-12-2012	John R. Slater	John R. Slater	4064 Franklin Pike Rd JACKSON Ohio 45640	NO COLL IN PIKETON
31	1-12-2012	Noscoe Layfield	Noscoe Layfield	619 WHITES RD LUCASVILLE OH 45648	NOT HERE
32	01-12-2012	David E. Lee	DAVID E. LEE	143 STRICKLAND RD PIKETON OHIO 45661	DO NOT WANT
33	01-12-2012	Keith King	Keith King	1960 Flatwood Fallow Piketon Rd Lucasville, Ohio 45648	Not here

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	Date	Signature	Printed Name	Address	Comment
34	1-12-2012	Mark Rader	MARK RADER	1275 RALPH RIEGEL RD JACKSON, OHIO	NO
35	1-12-2012	H.A. Ruel	H.A. RUEL	2013 HIGH ST. PORTSMOUTH, OHIO	NO
36	1-12-2012	Rick Easter	Rick Easter	83 JANE LANE STOUT OHIO	
37	1-12-2012	Rick Jordan	Rick Jordan	608 MARY RD WAVERLY OH	NO
38	1-12-2012	Kathy Marshon	Kathy Marshon	1367 Bellamy Rd WEST Portsmouth Ohio	NO
39	1-12-2012	JE MORTGOMERY	JE MORTGOMERY	767 GODES CREEK RD WHEELERSHIP OH	NO
40	1-12-2012	FRANCIS L MULLINS	FRANCIS L MULLINS	14885 BEAVER JACKSON, OH	NO
41	1-12-2012	HADEN DAVIS	HADEN DAVIS	458 DART RD WAVERLY OHIO	NO
42	1-12-2012	CHRISTOPHER POTMES	CHRISTOPHER POTMES	155 CHERRY FORK RD WINCHESTER OH	NO
43	1-12-2012	MICHAEL S. ALFORD	MICHAEL S. ALFORD	252 SPARKS RD RAY, OHIO 45672	NO
44	1-12-2012	JOHN JENKINS	JOHN JENKINS	121 KENEDY RD MILFORD OH 45653	NO
45	1/12/2012	JEFFREY D. PINSON	JEFFREY D. PINSON	98 White Gavel Dewing Rd MILFORD, OH 45653	NO

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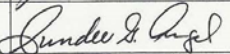
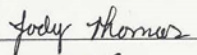
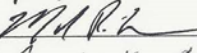
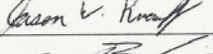
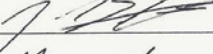

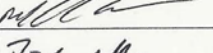
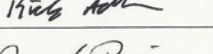
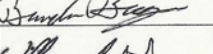
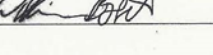
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	Date	Signature	Printed Name	Address	Comment
46	1-12-12	Nina Dadosky	NINA DADOSKY	1081 COLLEY RD M=DERMOTT OH 45632	NO
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	Date	Signature	Printed Name	Address	Comment
1	12/19/11		Josh Lamerson	505 BoBo Rd Brewer OH	
2	12/19/11		Sundee G. Angel	29615 Poling Road Kingston, OH 45644	
3	12/19/11		Jody THOMAS	110 HOFFMAN LANE WAVERLY, OHIO 45690	
4	12/19/11		MARK R. MOENMAN	258 HIGH ST PROCTOR, OH. 45660	
5	12/19/11		Jason W. Krafft	5400 Vaughn Ridge Rd. Peebles, OH 45660	
6	12/19/11		Jason E. Burkitt	3975 St. Rt. 772 Piketon, Ohio 45661	
7	12/19/2011		Matt Whitt	P.O. Box 851 Pikewoods KY 41139	
8	12/19/2011		Russell May	237 Armstrong Hollow Rd Waverly, OH. 45690	
9	12/19/2011		Rickey Adkins	8225 St. Rt. 784 South Shore, KY 41175	
10	12/19/2011		Brandon Brigner	6185 Beaver Pike Beaver On 45613	
11	12/19/2011		William Baker	7697 N. State Route 137 Lucasville Ohio 45658	



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	Date	Signature	Printed Name	Address	Comment
12	12-19-2011	Roger Sherman	Roger Sherman	1635 Horton Sisters Rd Oak Hill, Ohio	
13	12-19-2011	Jim White	Jim White	2394 TWIN LAKE RD MC DEANETT, OH	
14	12-19-2011	Will R. Aldert	Will R Aldert	6365 Red Hollow Rd Waverly, Ohio 45690	
15	12-19-2011	Wayne E. Skaggs	Wayne E. Skaggs	20184 US 23 Chillicothe, Ohio 45601	
16	12-19-2011	Jeff C. Isbell	Jeff C. Isbell	617 S MARKET ST. APT. 21 WAVERLY OH.	
17	12-19-2011	Darren McAffee	Darren McAffee	10545 Kendall Rd Winchester OH	
18	12-19-2011	Brody O'Harey	Brody O'Harey	1512 10th St. Winchester OH 45391	
19	12-19-2011	Brandon Crozier	BRANDON CROZIER	12907 BERVER PIKE JACKSON, OH 45640	
20	12-19-2011	Brian Lambert	Brian Lambert	20154 Four Mile Rd Jackson, Ohio 45640	
21	12-19-2011	Scammy Johnson	Scammy Johnson	1210 Beech Ridge Dr. Beaver, Ohio 45613	

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	Date	Signature	Printed Name	Address	Comment
22	12/19/2011	Jay Thomas	Jay Thomas	Box 111 St Rt 551 Waverly OH	
23	12/19/2011	Eddie J. Carrico	Eddie J. Carrico	112 Thornton Dr. Piketon OH	
24	12/19/2011	Harold Fuley	Harold Fuley	1003 St Rt 551 Waverly OH 45660	
25	12-19-2011	Ticker D. Woods	Ticker D. Woods	402 Valley View Dr Piketon, Ohio 45661	
26	12/19/11	Elissa Robinson	Elissa Robinson	2337 Spunk Run Rd Piketon Ohio 45661	
27	12/19/11	Sara Montgomery	Sara Montgomery	85 Georgey Rd Waverly, OH	That's just ridiculous!
28	12-22-11	John D. Kneiff	John D. Kneiff	5496 Cambridge Piketon OH 45661	HELL NO!!!
29	12-23-11	Denise L. Bryant	Denise L. Bryant	204 Woodsworth Ave Waverly OH 45670	" " " " " "
30	12-23-11	William B. Nickell	William B. Nickell	104 4th St Beaver OH 45612	" " " " " "
31	12-23-11	Jill D. Lizon	Jill D. Lizon	Beaver Ohio 45612	" " " " " "
32	12-31-11	William Legg	William Legg	350 Virginia Ln OH	" " " " " "
33	1-1-12	Steven Miles	Steven Miles	933 Smith Rd. Piketon, Ohio	" " " " " "

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	Date	Signature	Printed Name	Address	Comment
34	12/31/11	<i>Lucinda A. Legg</i>	Lucinda A. Legg	721 S. R. 1.551 Waverly, OH 45690	
35	12-31-11	<i>Thomas M. Legg</i>	THOMAS M. LEGG	721 S. R. 1.551 Waverly, OH 45690	
36	1-1-12	<i>Harold S. Davis</i>	Harold S. Davis	1951 Maple Rd Waverly, OH 45690	
37	1-1-12	<i>Harold S. Davis</i>	Harold S. Davis	1951 Maple Rd Waverly, OH 45690	
38	1-1-12	<i>Roy H. Noel</i>	ROY H. NOEL	14 DUTCH RUN RD PIKETON, OH 45661	
39	1-1-12	<i>Ruthann Noel</i>	RUTHANN NOEL	14 DUTCH RUN RD PIKETON OH 45661	
40	1-5-12	<i>Kim S. Coleman</i>	Kim S. Coleman	1815 McCorkle Rd PIKETON OH 45661	
41	1-5-12	<i>Cheryl A. Coleman</i>	Cheryl A. Coleman	1815 McCorkle Rd PIKETON OH 45661	
42					
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Date	Signature	Printed Name	Address	Comment
1-7-12	Ben Korch	Ben Korch	2110 Lanbeck	
1-7-12	Jennifer Ruggles	Jennifer Ruggles	222 Schuster Rd.	
Jan 7, 2012	Eli Ruggles	Eli Ruggles	222 Schuster Rd.	
1-7-2012	Josh Blarins	Josh Blarins	407 Taylor Hollow Rd.	
1-7-2012	John Short	JOHN SHORT	503 TAYLOR HOLLOW RD	
1-7-2012	Lissa Conley	Lissa Conley	1365 Schuster Rd	
1-7-2012	James Louderback	JAMES LOUDERBACK	1537 " "	
1-7-2012	Shawn McComar	Shawn McComar	1751 Schuster Rd	
1-7-12	Ron Hurless	Ron Hurless	1809 Schuster Rd	
1-7-12	Brittani Rider	Brittani Rider	521 Happy Hollow Rd Piketon OH 45601	



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Date	Signature	Printed Name	Address	Comment
11/1/12	Mary Kibler	Mary Kibler	411 Taylor Hollow Rd	
1-7-12	Matt Hannah	Matt Hannah	605 Schuster Rd	

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**APPENDIX A: APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS AND  
TO-BE-CONSIDERED GUIDANCE FOR THE SITE-WIDE WASTE DISPOSITION  
EVALUATION PROJECT**

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## ACRONYMS

ARAR	applicable or relevant and appropriate requirement
CAMU	Corrective Action Management Unit
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended
<i>CFR</i>	<i>Code of Federal Regulations</i>
DFF&O	<i>The April 13, 2010 Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action, including the July 16, 2012 Modification thereto</i>
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
NRHP	National Register of Historic Places
<i>OAC</i>	<i>Ohio Administrative Code</i>
Ohio EPA	Ohio Environmental Protection Agency
OSDC	on-Site disposal cell
PORTS	Portsmouth Gaseous Diffusion Plant
RCRA	Resource Conservation and Recovery Act of 1976, as amended
TBC	to-be-considered (guidance)
TSCA	Toxic Substances Control Act of 1976

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## A.1 INTRODUCTION

In accordance with the requirements of *The April 13, 2010 Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action, including the July 16, 2012 Modification thereto* (DFF&O) and pursuant to Ohio's laws and regulations, and utilizing 40 *Code of Federal Regulations (CFR)* 300.430(f)(1)(ii)(B) of the National Oil and Hazardous Substances Pollution Contingency Plan and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), as a framework, entirely on-Site remedial actions are required to attain applicable or relevant and appropriate requirements (ARARs), unless waived in accordance with the DFF&O and consistent with 40 *CFR* 300.430(f)(1)(ii)(C). The ARARs include federal and state environmental or facility siting laws/regulations; they do not include occupational safety or worker radiation protection requirements. Additionally, per the DFF&O and 40 *CFR* 300.400(g)(3), other advisories, criteria, or guidance may be considered in determining remedies (to-be-considered [guidance] [TBC]).

Paragraph 9.a of the DFF&O provides that portions of response actions conducted entirely on site pursuant to work plans or plans concurred with or approved by the Ohio Environmental Protection Agency (Ohio EPA) under the Order can be conducted pursuant to Section 121(e)(1) of CERCLA, 42 *United States Code* Section 9621. Section 121(e)(1) specifically provides that no federal, state, or local permit shall be required for the portion of any removal or remedial action conducted entirely as an on-site response action. In addition to "permits," the U.S. Environmental Protection Agency (EPA) has interpreted this section broadly to cover: "all administrative provisions from other laws, such as recordkeeping, consultation, and reporting requirements. In other words, administrative requirements do not apply to on-site response actions." (EPA 1998). Those portions of the remedial action that are taken off site are subject to both the substantive and administrative requirements of applicable laws.

ARARs are typically divided into three groups: (1) chemical-specific, (2) location-specific, and (3) action-specific. Both location- and action-specific ARARs/TBC are included in Table A.1. No chemical-specific ARARs were identified. In some cases, the conditions associated with the prerequisite requirements have not been confirmed to be present; if the subject condition is encountered during implementation of the action, then the specified ARAR will be triggered. A brief description of key ARAR/TBC topics follows.

Development of ARARs has been an iterative process. The final list of enforceable ARARs and TBCs is set with the signature of this Record of Decision.

## A.2 CHEMICAL-SPECIFIC ARARS/TBCS

Chemical-specific ARARs provide health- or risk-based concentration limits or discharge limitations in various environmental media (i.e., surface water, groundwater, soil, and air) for specific hazardous substances, pollutants, or contaminants. Because this Site-wide Waste Disposition Evaluation decision is not addressing cleanup decisions for contaminated environmental media, chemical-specific ARARs and TBCs are not identified at this stage.

### **A.3 LOCATION-SPECIFIC ARARS/TBCS**

Requirements that establish restrictions on permissible concentrations of hazardous substances or that establish requirements for how activities will be conducted because they are in special locations (have been identified for the Portsmouth Gaseous Diffusion Plant (PORTS) wetlands, endangered species, and historic properties). Sensitive resources identified at the On-Site Disposal Cell (OSDC) location will be protected in accordance with the location-specific ARARs and TBCs listed in Table A.1, as appropriate.

#### **A.3.1 FLOODPLAINS AND WETLANDS**

Wetlands, floodplains, and aquatic resources are present on PORTS facility. Study Area D is not located within a 100- or 500-year floodplain, and none of the planned activities are expected to impact floodplain areas. Six jurisdictional wetlands have been identified at Study Area D, and they may be impacted by the OSDC, support facilities, or haul road construction. These resources will be appropriately protected in accordance with the location-specific ARARs and TBCs identified in Table A.1. Activities will be designed to avoid or minimize impacts to wetlands. In the event wetlands are impacted, mitigation activities will be incorporated into design where such impacts occur.

#### **A.3.2 THREATENED AND ENDANGERED SPECIES**

A PORTS-wide threatened and endangered species survey, which was completed in 1996, identified a number of potentially suitable habitats at PORTS for federal- and State of Ohio-listed threatened and endangered species, although only one state-listed plant species was actually observed at that time. Habitat for the Indiana bat has been identified in Study Area D but, despite numerous efforts, none of the bats have been identified at PORTS. Therefore, ARARs for protection of these resources are not included in Table A.1.

#### **A.3.3 CULTURAL RESOURCES**

Cultural resources include any prehistoric or historic district, site, building, structure, or object resulting from, or modified by, human activity. Under federal regulations (36 *CFR* 800), federal agencies must assess the impacts their actions have on historic properties and, if appropriate, avoid or mitigate adverse effects. Historic properties are cultural resources listed in, or eligible for listing in, the National Register of Historic Places (NRHP) because of their significance and integrity.

The National Historic Preservation Act of 1966, Section 106, requires that a proposed activity be assessed for impacts to historic properties (see Table A.1). There is one archeological site that is eligible for listing on the NRHP located in the area of planned construction. The U.S. Department of Energy (DOE) will perform a Phase III/data recovery for the archaeological site that will be affected by the action and will do so in coordination with the Site Historic Preservation Officer and the Tribal Nations.

Because the scope of the Environmental Management Program at PORTS is comprehensive and both above- and below-ground activities to address risks and hazards, DOE proposes a comprehensive approach to take into account the effects the potential actions may have on historic properties.

### **A.4 ACTION-SPECIFIC ARARS/TBCS**

Action-specific ARARs include operation, performance, and design requirements or limitations based on the waste types, media, and removal/remedial activities.

The action-specific ARARs and TBCs identified in Table A.1 address design, construction, operation, capping, and postoperations care for the selected alternative. These include landfill design and operation requirements under the Toxic Substances Control Act of 1976 (TSCA) and Subtitle C of the Resource Conservation and Recovery Act of 1976, as amended (RCRA), certain DOE Order 435.1-1 requirements for low-level (radioactive) waste disposal facilities, state requirements under *Ohio Administrative Code (OAC)* 3745-27 for solid waste landfills, and Clean Air Act requirements for asbestos-containing materials disposal facilities.

The action-specific ARARs and TBCs also include landfill siting requirements for siting waste disposal facilities. The siting requirements and considerations, detailed in Table A.1, can be grouped generally as floodplains, wetlands, seismic considerations, hydrologic considerations, suitable terrain, land use, buffers, and ecological and cultural considerations. Table A.1 also includes location-specific ARARs and TBCs that include siting considerations to protect sensitive resources (e.g., wetlands, floodplains, and streams). The Ohio siting criterion (*OAC* 3745-27-07[H][4][d]) that requires a setback of 200 ft from a stream, lake, or wetland for solid waste placement in a sanitary landfill facility will need to be waived in accordance with the DFF&O and consistent with 40 *CFR* 300.430(f)(1)(ii)(C) for this alternative.

In 1993, EPA promulgated rules establishing special units under RCRA, called Corrective Action Management Units (CAMUs), to facilitate treatment, storage, and disposal of hazardous wastes managed for implementing cleanup. CAMUs were also established to remove the disincentives to cleanup that the application of stringent RCRA land disposal restrictions and treatment standards to these wastes (called “remediation wastes”) can sometimes impose. The amendments established minimum design and operating standards for CAMUs and minimum treatment standards for wastes placed in CAMUs (“CAMU-eligible wastes”). The rule also amended the regulations for staging piles to expressly allow for mixing, blending, and similar physical operations intended to prepare waste for subsequent management and treatment. It also added a provision allowing off-Site placement of CAMU-eligible waste in hazardous waste landfills. The ROD designates the OSDC as a treatment, storage, and disposal CAMU and therefore ARARs for both CAMU and land disposal regulations are included in Table A.1. Land disposal related ARARs will apply to non-CAMU-eligible hazardous wastes while the CAMU rules including treatment standards and regulations for staging piles will apply to CAMU-eligible wastes. The appropriate set of regulations will be evaluated during remedial design, based on the CAMU-eligibility of the waste stream.

Primary wastes (e.g., wastes sent to the facility for disposal), secondary wastes (e.g., contaminated personal protective equipment, decontamination wastes), and fill must be characterized and managed appropriately in accordance with State of Ohio laws and regulations, including (but not limited to) those for hazardous, solid, and radioactive waste, as well as federal TSCA, DOE Order, and Clean Air Act requirements (and the other requirements as specified in the table). Long-term storage of waste is not anticipated, although provisions for temporary storage are included. Hazardous waste determinations will be based on available process knowledge and sampling/analysis results.

Wastewater, including leachate and contaminated storm water, will be treated on Site for radioactive and non-radioactive constituents, including volatile organic compounds. This treatment will be done at a newly constructed on-Site wastewater treatment unit. Treated effluent will be discharged to surface water via a newly established outfall(s) and in compliance with appropriate outfall limits established in consultation with Ohio EPA to ensure surface water quality standards are not exceeded. Water treatment ARARs are included in Table A.1 to address this potential new unit and outfall(s). It is assumed that the wastewater treatment system would emit less than 10 lb/day of air contaminants in compliance with the

de minimis emission limits of *OAC* 3745-15-05(B). This will be evaluated further as the remedial design progresses.

It is anticipated that a centralized treatment facility may have some capability to treat waste to meet physical or analytical waste acceptance criteria, as deemed necessary. The OSDC will be responsible for any necessary treatment and/or off-Site transport of its own facility-generated wastes or fill that cannot meet the waste acceptance criteria for on-Site disposal.

The requirements for a TSCA chemical waste landfill in 40 *CFR* 761.75 will be ARARs for disposal of such wastes in the OSDC. The TSCA chemical waste landfill design requirements generally follow the RCRA landfill design requirements. TSCA, however, specifies that if a synthetic liner is used, it must have a minimum thickness of 30 mil. In addition, TSCA specifies that the bottom of the liner must be located 50 ft above the historical high groundwater mark and must prohibit any hydrologic connection between the OSDC and any surface water (40 *CFR* 761.75[b][3]).

## **A.5 REFERENCES**

EPA 1998, *RCRA, Superfund & EPCRA Hotline Training Module: Introduction to Applicable or Relevant and Appropriate Requirements*, EPA/540-R-98-020 (Updated February 1998), OSWER Directive 9205.5-10A, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C., June.

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio**

Media/Location/Action <sup>a</sup>	Requirements <sup>b</sup>	Prerequisite	Citation
<i>Location-specific ARARs</i>			
<i>Wetlands</i>			
Presence of wetlands as defined in 10 <i>CFR</i> 1022.4	Avoid, to the extent possible, the long- and short-term adverse effects associated with destruction, occupancy, and modification of wetlands.	DOE actions that involve potential impacts to, or take place within, wetlands— <b>applicable</b>	10 <i>CFR</i> 1022.3(c)
	Take action, to extent practicable, to minimize destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands.		10 <i>CFR</i> 1022.3(a)(7) and (8)
	Undertake a careful evaluation of potential effects of any new construction in wetlands. Identify, evaluate, and, as appropriate, implement alternative actions that may avoid or mitigate adverse impacts on wetlands.		10 <i>CFR</i> 1022.3(b) and (d)
	Measures to take to mitigate the adverse effects of actions in wetlands include, but are not limited to, minimum grading requirements, runoff controls, design and construction constraints, and protection of ecology-sensitive areas.		10 <i>CFR</i> 1022.13(a)(3)
	If no practicable alternative to locating or conducting the action in the wetland is available, then before taking action, design or modify the action in order to minimize potential harm to or within the wetland, consistent with the policies set forth in Executive Order 11990.		10 <i>CFR</i> 1022.14(a)

<sup>a</sup>Definitions of terms used in the Ohio solid waste regulations are given in *OAC* 3745-27-01. All *OAC* Chapter 3745-27 rules that refer to the term “aquifer” or “aquifer system” are utilizing those terms as they are defined in *OAC* Rule 3745-27-01(A)(5) and (6). Likewise, the *OAC* Chapter 3745-50 rules that refer to the term “aquifer” are utilizing the term as it is defined in *OAC* Rule 3745-50-10(A)(7). *OAC* 3745-27-10(B)(3)(c)(ii) refers to monitoring the uppermost aquifer system or any significant zones of saturation [*OAC* 3745-27-01(A)(22)] above the uppermost aquifer system as defined in *OAC* Rule 3745-27-01(A)(5) and (6).

<sup>b</sup>The requirements portion of the ARARs table is intended to provide a summary of the cited ARAR. The omission of any particular requirement does not limit the scope of the cited ARARs.

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Presence of jurisdictional wetlands	Except as provided under the CWA Section 404(b)(2), no discharge of dredged or fill material into an aquatic ecosystem is permitted if there is a practicable alternative that would have less adverse impact on the aquatic ecosystem or if it will cause or contribute to significant degradation of the waters of the United States.	Actions that involve the discharge of dredged or fill material into waters of the United States, including jurisdictional (adjacent) wetlands— <b>applicable</b>	40 <i>CFR</i> 230.10(a) and (c)
	Except as provided under the CWA Section 404(b)(2), no discharge of dredged or fill material shall be permitted unless appropriate and practicable steps in accordance with 40 <i>CFR</i> 230.70 <i>et seq.</i> are taken that will minimize potential adverse impacts of the discharge on the aquatic ecosystem.		40 <i>CFR</i> 230.10(d)
Water pollution and sludge management violations prohibited.	No entity shall cause pollution or place or cause to be placed any sewage, sludge, sludge materials, industrial waste, or other wastes in a location where they cause pollution of any waters of the state.		<i>ORC</i> 6111.04(A)
Presence of wetlands as defined under <i>OAC</i> 3745-1-02(B)(90)	Wetlands designated uses, as assigned in accordance with <i>OAC</i> 3745-1-54(B)(2), shall be maintained and protected such that degradation of surface waters through direct, indirect, or cumulative impacts does not result in the net loss of wetland acreage or functions in accordance with the substantive wetland avoidance, minimization, and compensatory mitigation requirements of the paragraphs (D) and (E) of <i>OAC</i> 3745-1-54.  Wetland narrative criteria in <i>OAC</i> 3745-1-51(A) shall be protected to prevent significant adverse impacts on the hydrology necessary to support the biological and physical characteristics naturally present in wetlands	Activity that would cause loss of wetlands as defined under <i>OAC</i> 3745-1-02(B)(90)— <b>applicable</b>	<i>OAC</i> 3745-1-54(B)(1) <i>OAC</i> 3745-1-51 through -54



**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Presence of wetlands as defined under <i>OAC 3745-1-02(B)(90)</i> (continued)	Wetland narrative criteria in <i>OAC 3745-1-51(B)</i> shall be protected to prevent significant adverse impacts on water quality necessary to support existing habitat and populations of wetland flora and fauna and to prevent conditions conducive to the establishment or proliferation of nuisance organisms		
Presence of “isolated” wetlands as defined under <i>ORC 6111.02</i>	<p>No person shall engage in the filling of an isolated wetland unless authorized to do so pursuant to the substantive requirements of a general or individual state isolated wetland permit.</p> <p>Must comply with the following substantive requirements and conditions of this permit:</p> <ul style="list-style-type: none"> <li>• Only suitable material free of toxic contaminants in other than trace quantities shall be used as fill material.</li> <li>• Use of asphalt and rubber tires as fill is prohibited.</li> <li>• Wetland narrative and chemical criteria in <i>OAC 3745-1-51</i> and <i>3745-1-52</i> shall be maintained in isolated wetlands wholly or partially avoided.</li> <li>• Visible signage, as detailed in the general permit, shall be placed around the delineated boundary of the avoided wetlands.</li> </ul>	<p>Actions that involve the discharge of dredged or fill material into “isolated wetlands”—<b>applicable</b></p> <p>Category 1 or 2 “isolated wetlands” of a total of 0.5 acre or less—<b>applicable</b></p>	<p><i>ORC 6111.021 – 6111.028</i></p> <p>Ohio General Permit for Filling Category 1 and Category 2 Isolated Wetlands (effective April 10, 2012)</p>

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Presence of “isolated” wetlands as defined under <i>ORC</i> 6111.02 (continued)	Mitigation is required either on or off site, or at a mitigation bank within the same U.S. Army COE district as the project location. Mitigation must be conducted in accordance with the ratios established in the general permit depending on the wetland category designation. The mitigation site shall be protected in perpetuity, and appropriate practicable management measures including vegetative buffers shall be implemented to restrict harmful activities that jeopardize the mitigation.	Actions that involve the discharge of dredged or fill material into Category 1 or 2 “isolated wetlands” of a total of 0.5 acre or less— <b>applicable</b>	Ohio General Permit for Filling Category 1 and Category 2 Isolated Wetlands (effective April 10, 2012)
<b><i>Aquatic resources</i></b>			
Location encompassing aquatic ecosystem as defined in 40 <i>CFR</i> 230.3(c)	Except as provided under Section 404(b)(2), no discharge of dredged or fill material into an aquatic ecosystem is permitted if there is a practicable alternative that would have less adverse impact on the aquatic ecosystem or if it will cause or contribute to significant degradation of the waters of the United States.	Action that involves discharge of dredged or fill material into waters of the United States— <b>applicable</b>	40 <i>CFR</i> 230.10(a) and (c) <i>OAC</i> 3745-32-05
	Except as provided under Section 404(b)(2), no discharge of dredged or fill material shall be permitted unless appropriate and practicable steps in accordance with the substantive provisions of 40 <i>CFR</i> 230.70 <i>et seq.</i> are taken that will minimize potential adverse impacts of the discharge on the aquatic ecosystem.		40 <i>CFR</i> 230.10(d) <i>OAC</i> 3745-32-05
	Consideration of mitigation will occur throughout the activity and includes avoiding, minimizing, rectifying, reducing, or compensating for resource losses. Losses will be avoided to the extent practicable. Compensation may occur on-site or at an off-site location. Mitigation requirements generally fall into three categories:	Action that involves discharge of dredged or fill material into waters of the United States— <b>applicable</b>	33 <i>CFR</i> 320.4(r)(1)
	<ul style="list-style-type: none"> <li>Minor project modifications considered feasible (cost, constructability, etc.) and that, if adopted, result in a project that generally meets the purpose and need.</li> </ul>		33 <i>CFR</i> 320.4(r)(1)(i)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Location encompassing aquatic ecosystem as defined in 40 <i>CFR</i> 230.3(c) (continued)	<ul style="list-style-type: none"> <li>Further mitigation measures required to satisfy legal requirements. For CWA 404 applications, mitigation shall be required to ensure project complies with CWA 404(b)(1) Guidelines.</li> </ul>		33 <i>CFR</i> 320.4(r)(1)(ii)
	<ul style="list-style-type: none"> <li>Mitigation measures that may be required as a result of the public interest review process. Such should be developed and incorporated within the public interest review process to the extent that it is found to be reasonable and justified.</li> </ul>		33 <i>CFR</i> 320.4(r)(1)(iii)
	All compensatory mitigation will be for significant resource losses which are specifically identifiable, reasonably likely to occur, and of importance to the human or aquatic environment. All mitigation will be directly related to the impacts of the proposal, appropriate to the scope and degree of those impacts, and reasonably enforceable.		33 <i>CFR</i> 320.4(r)(2)
Location encompassing stream ecosystem – stream antidegradation review requirements	Activities may be approved that lower water quality only if there has been an examination of non-degradation, minimal degradation and mitigative technique alternatives, a review of the social and economic issues related to the activity, a public participation process and appropriate intergovernmental coordination, and it is determined that the lower water quality is necessary to accommodate important social or economic development in the area in which the water body is located.	Action that involves aquatic habitat alterations caused by an activity and associated construction disturbances that would result in the loss of an existing or designated stream use— <b>applicable</b>	OAC 3745-1-05(C)(5)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Location encompassing stream ecosystem – stream antidegradation review requirements (continued)	The director may require the applicant to implement a non-degradation alternative, a minimal degradation alternative or a mitigative technique alternative to offset all or part of the proposed lowering of water quality if the director determines that the alternative is technically feasible and economically justifiable. Any lowering of water quality shall not exceed the limitations specified in <i>OAC 3745-1-05(C)(6)</i> . When making determinations regarding proposed activities that lower water quality the director shall consider the factors listed in <i>OAC 3745-1-05(C)(5)(a)</i> through (m).		
Criteria for decision by director	The directors shall evaluate the criteria in <i>OAC 3745-32-05</i> and shall not issue a Section 401 water quality certification unless he determines that the applicant has demonstrated that the discharge of dredged or fill material to waters of the state or the creation of any obstruction or alteration in waters of the state will not prevent or interfere with the attainment or maintenance of applicable water quality standards or not result in a violation of any applicable provision of sections of the Federal Water Pollution Control Act listed in <i>OAC 3745-32-05(2)</i> .	Action that involves aquatic habitat alterations caused by an activity and associated construction disturbances that would result in the loss of an existing or designated stream use— <b>applicable</b>	<i>OAC 3745-32-05</i>
Criteria applicable to all waters	Water quality criteria in <i>OAC 3745-1-04</i> shall be applied to all surface waters of the state including mixing zones to every extent practical and possible as determined by the director.	Actions that that may result in the lowering of water quality	<i>OAC 3745-1-04</i>
<b><i>Cultural resources</i></b>			
Presence of archaeological resources	Must provide for the preservation of significant historical and archeological data which might otherwise be irreparably lost or destroyed as a result of any alteration of terrain caused as a result of any federal construction project.	Federal construction projects that would cause the irreparable loss or destruction of significant historical or archeological resources or data— <b>applicable</b>	16 <i>USC</i> 469

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Presence of human remains, funerary objects, sacred objects, or objects of cultural patrimony for Native Americans	Must stop activities in the area of the discovery and take reasonable effort to secure and protect the objects discovered before resuming activity.	Federal agency construction activities that inadvertently discover Native American cultural items on federal lands— <b>applicable</b>	25 <i>USC</i> 3002(d) 43 <i>CFR</i> 10.4(c) and (d)(2)
Presence of historic resources	Federal agencies must take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register.	Federal agency undertaking that may impact historic properties listed or eligible for inclusion on the National Register of Historic Places— <b>applicable</b>	16 <i>USC</i> 470f 36 <i>CFR</i> 800.1(a)
	Federal agencies must initiate measures to assure that where, as a result of Federal action, a historic property is to be substantially altered or demolished, timely steps are taken to make or have made appropriate records.	Substantial alterations or demolition of a historic property— <b>applicable</b>	16 <i>USC</i> 470h-2(b)
<b><i>Action-specific ARARs</i></b>			
<b>HAZARDOUS WASTE</b>			
<b><i>Design, construction, operation and closure of a hazardous waste landfill</i></b>			
Siting of RCRA hazardous waste landfill	Portions of new facilities where treatment, storage, or disposal of hazardous waste will be conducted shall not be located within 61 m (approximately 200 ft) of a fault that had displacement in Holocene time.	Construction of a RCRA hazardous waste landfill— <b>applicable</b>	40 <i>CFR</i> 264.18 <i>OAC</i> 3745-54-18(A)(1)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

Media/Location/Action <sup>a</sup>	Requirements <sup>b</sup>	Prerequisite	Citation
Siting Criteria Document Requirements	<p>A hazardous waste facility installation and operation permit cannot be approved unless it is proven that the facility:</p> <ul style="list-style-type: none"> <li>Complies with the hazardous waste standards</li> <li>Represents the minimum adverse environmental impact, considering the state of available technology and the nature and economics of various alternatives</li> <li>Represents the minimum risk of all of the following: <ul style="list-style-type: none"> <li>(i) fires or explosions from TSD methods;</li> <li>(ii) release of hazardous waste during transportation to or from facility; (iii) adverse impact on the public health and safety</li> </ul> </li> <li>Must not be located within the boundaries of a state park or state park purchase area or national park or recreation area or national park candidate area.</li> </ul>	<p>Construction of a RCRA hazardous waste landfill—<b>applicable</b></p>	<p><i>OAC 3745-50-38(A)</i></p> <p><i>OAC 3745-50-38(A)(2)</i></p> <p><i>OAC 3745-50-38(A)(3)</i></p> <p><i>OAC 3745-50-38(A)(4)</i> (a) – (c)</p> <p><i>OAC 3745-50-38(A)(7)</i></p>
Design of a RCRA hazardous waste facility	Facilities must be designed, constructed, maintained, and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or nonsudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.	Construction of a RCRA hazardous waste facility— <b>applicable</b>	<p>40 <i>CFR</i> 264.31</p> <p><i>OAC 3745-54-31</i></p>
Liner and leachate collection design for a RCRA landfill	Must install two or more liners and a leachate collection and removal system above and between such liners.	Construction of a RCRA hazardous waste landfill— <b>applicable</b>	<p>40 <i>CFR</i> 264.301(c)</p> <p><i>OAC 3745-57-03(C)</i></p>
	<p><i>Liner</i> The liner system must include a:</p> <p>Top liner, designed and constructed of materials (e.g., geomembrane) to prevent the migration of hazardous constituents into the liner during active life and the postclosure period; and a</p>		<p>40 <i>CFR</i> 264.301(c)(1)(i)</p> <p><i>OAC 3745-57-03(C)(1)(a)</i></p> <p>40 <i>CFR</i> 264.301(c)(1)(i)(A)</p> <p><i>OAC 3745-57-03(C)(1)(a)(i)</i></p>

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Liner and leachate collection design for a RCRA landfill (continued)	Composite bottom liner consisting of at least two components:		40 <i>CFR</i> 264.301(c)(1)(i)(B) <i>OAC</i> 3745-57-03 (C)(1)(a)(ii)
	<ul style="list-style-type: none"> <li>Upper component must be designed and constructed of materials to prevent migration of hazardous constituents into component during active life and postclosure period.</li> <li>Lower component constructed of at least 3 ft of compacted soil material with a hydraulic conductivity of no more than <math>1 \times 10^{-7}</math> cm/s.</li> </ul>		
	Liners must comply with Paragraphs (a)(1)(i), (ii), and (iii) of this section, which states that the liner must be:		40 <i>CFR</i> 264.301(c)(1)(ii) <i>OAC</i> 3745-57-03(C)(1)(b) 40 <i>CFR</i> 264.301(a)(1)(i) <i>OAC</i> 3745-57-03(A)(1)(a)
	<ul style="list-style-type: none"> <li>Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients, physical contact with the waste or leachate to which they are exposed, climatic conditions, or stress from installation or daily operation</li> <li>Placed on a foundation or base capable of supporting the liner and resistance to the pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression or uplift</li> <li>Installed to cover all areas likely to be in contact with the waste or leachate.</li> </ul>		40 <i>CFR</i> 264.301(a)(1)(ii) <i>OAC</i> 3745-57-03(A)(1)(b)
	Must be designed, constructed, operated, and maintained to collect and remove leachate from the landfill during the active life and postclosure period and ensure that the leachate depth over the liner does not exceed 30 cm, and comply with Paragraphs (c)(3)(iii) and (iv) of this section.	Construction of a RCRA hazardous waste landfill— <b>applicable</b>	40 <i>CFR</i> 264.301(a)(1)(iii) <i>OAC</i> 3745-57-03(A)(1)(c) 40 <i>CFR</i> 264.301(c)(2) <i>OAC</i> 3745-57-03(C)(2)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Liner and leachate collection design for a RCRA landfill (continued) <i>Top leachate collection and removal system</i>	Leachate collection and removal system must be constructed of materials that are: <ul style="list-style-type: none"> <li>Chemically resistant to waste managed in landfill and leachate generated.</li> <li>Of sufficient strength and thickness to prevent collapse under pressures exerted by overlying wastes, waste cover materials, and any equipment used.</li> </ul> <p>Must be designed and operated to minimize clogging during the active life of the facility and postclosure care period of the landfill.</p>		40 <i>CFR</i> 264.301(c)(3)(iii) <i>OAC</i> 3745-57-03(C)(3)(c)
<i>Bottom leachate collection and removal system/leak detection system</i>	Leachate collection and removal system must be capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time through all areas of the top liner likely to be exposed to waste or leachate during the active life and postclosure care period. Requirements for a leak detection system are satisfied by installation of a system that is: <ul style="list-style-type: none"> <li>Constructed with a bottom slope of 1% or more</li> <li>Constructed of granular drainage materials with a hydraulic conductivity of <math>1 \times 10^{-2}</math> cm/s and a thickness of 12 in. or more or synthetic or geonet drainage materials with a transmissivity of <math>3 \times 10^{-5}</math> m<sup>2</sup>/s</li> <li>Constructed of materials that are chemically resistant to waste managed and expected leachate to be generated, and structurally sufficient to resist pressures exerted by waste, cover, and equipment used at the landfill</li> <li>Designed and operated to minimize clogging during the active life of the facility and postclosure care period</li> </ul>	Construction of a RCRA hazardous waste landfill— <b>applicable</b>	40 <i>CFR</i> 264.301(c)(3)(iv) <i>OAC</i> 3745-57-03(C)(3)(d)  40 <i>CFR</i> 264.301(c)(3) <i>OAC</i> 3745-57-03(C)(3)  40 <i>CFR</i> 264.301(c)(3)(i) <i>OAC</i> 3745-57-03(C)(3)(a) 40 <i>CFR</i> 264.301(c)(3)(ii) <i>OAC</i> 3745-57-03(C)(3)(b)  40 <i>CFR</i> 264.301(c)(3)(iii) <i>OAC</i> 3745-57-03(C)(3)(c)  40 <i>CFR</i> 264.301(c)(3)(iv) <i>OAC</i> 3745-57-03(C)(3)(d)



**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

Media/Location/Action <sup>a</sup>	Requirements <sup>b</sup>	Prerequisite	Citation
Liner and leachate collection design for a RCRA landfill (continued)	<ul style="list-style-type: none"> <li>Constructed with sumps and liquid removal methods (e.g., pumps) of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up. Each unit must have its own sump(s). The design of each sump and removal system must provide a method for measuring and recording the volume of liquids present in the sump and of liquids removed.</li> </ul>		40 <i>CFR</i> 264.301(c)(3)(v) <i>OAC</i> 3745-57-03(C)(3)(e)
	Must collect and remove liquids in the leak detection system sumps to minimize the head on the bottom liner.		40 <i>CFR</i> 264.301(c)(4) <i>OAC</i> 3745-57-03(C)(4)
	If the leak detection system is not located completely above the seasonal high water table, a demonstration must be made that the operation of the system will not be adversely affected by groundwater.		40 <i>CFR</i> 264.301(c)(5) <i>OAC</i> 3745-57-03(C)(5)
Action leakage rate testing for the RCRA leachate detection system	The action leakage rate (maximum design flow rate that the leak detection system can remove without the fluid head on the bottom liner exceeding 1 ft) must include an adequate safety margin to allow for uncertainties in the design, construction, operation, and location of the leak detection system, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the leak detection system, and proposed response actions (e.g., the action leakage rate must consider decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover, and creep of synthetic components of the system, overburden pressures, etc.).	Construction and operation of a RCRA hazardous waste landfill— <b>applicable</b>	40 <i>CFR</i> 264.302(a) <i>OAC</i> 3745-57-04(A)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Action leakage rate testing for the RCRA leachate detection system (continued)	To determine if the action leakage rate has been exceeded, must convert the weekly or monthly flow rate from the monitoring data obtained under 40 <i>CFR</i> 264.303(c) to an average daily flow rate (gal/acre/day) for each sump. The average daily flow rate for each sump must be calculated weekly during the active life and closure period, and monthly during the postclosure period when monthly monitoring is required under 40 <i>CFR</i> 264.303(c).		40 <i>CFR</i> 264.302(b) <i>OAC</i> 3745-57-04(B)
Monitoring of liners and cover systems during and after construction and installation	During construction or installation, liners and cover systems must be checked for uniformity, damage, and imperfections (e.g., holes, cracks, thin spots, etc.).	Construction and operation of a RCRA landfill— <b>applicable</b>	40 <i>CFR</i> 264.303(a) <i>OAC</i> 3745-57-05(A)
	Immediately after construction or installations, synthetic liners must be checked to ensure tight seams and joints and the absence of tears, punctures, or blisters; soil based and mixed liners and covers must be checked for imperfections, including lenses, cracks, channels, or other structural nonuniformities.		40 <i>CFR</i> 264.303(a)(1) - (2) <i>OAC</i> 3745-57-05(A)(1)–(2)
	Must record the amount of liquids removed from the leak detection system sumps at least weekly during the active life and closure period.		40 <i>CFR</i> 264.303(c)(1)
Response actions for RCRA leachate detection system	Must develop actions to be taken if action leakage rate has been exceeded.	Operation of a RCRA landfill leak detection system— <b>applicable</b>	40 <i>CFR</i> 264.304(a) <i>OAC</i> 3745-57-06(A)
	If the flow rate into the leak detection system exceeds the action leakage rate for any sump, must determine:	Flow rate into the leak detection system exceeds action leakage rate for any sump— <b>applicable</b>	40 <i>CFR</i> 264.304 (b) <i>OAC</i> 3745-57-06(B)
	<ul style="list-style-type: none"> <li>To the extent practicable, the location, size, and cause of any leak</li> </ul>		40 <i>CFR</i> 264.304 (b)(3) <i>OAC</i> 3745-57-06(B)(3)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

Media/Location/Action <sup>a</sup>	Requirements <sup>b</sup>	Prerequisite	Citation
Response actions for RCRA leachate detection system (continued)	<ul style="list-style-type: none"> <li>Whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed</li> </ul>		40 <i>CFR</i> 264.304 (b)(4) <i>OAC</i> 3745-57-06(B)(4)
	<ul style="list-style-type: none"> <li>Any other short-term and longer-term actions to be taken to mitigate or stop any leaks.</li> </ul>		40 <i>CFR</i> 264.304 (b)(5) <i>OAC</i> 3745-57-06(B)(5)
	Must assess the source of liquids and amounts of liquids by source; conduct a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and assess the seriousness of any leaks in terms of potential for escaping into the environment; or document why such assessments are not needed.	Leak and/or remediation determinations required— <b>applicable</b>	40 <i>CFR</i> 264.304(c) (1) and (2) <i>OAC</i> 3745-57-06(C) (1) and (2)
Security system for a RCRA landfill	Must prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portion of his facility, unless:	Construction and operation of a RCRA hazardous waste landfill— <b>applicable</b>	40 <i>CFR</i> 264.14 <i>OAC</i> 3745-54-14(A)
	<ul style="list-style-type: none"> <li>Physical contact with the waste, structures, or equipment within the active portion of the facility will not injure unknowing or unauthorized persons or livestock which may enter the active portion of a facility</li> </ul>		40 <i>CFR</i> 264.14(1) <i>OAC</i> 3745-54-14(A)(1)
	<ul style="list-style-type: none"> <li>Disturbance of the waste or equipment, by the unknowing or unauthorized entry of persons or livestock onto the active portion of a facility, will not cause a violation of the requirements of this part.</li> </ul>		40 <i>CFR</i> 264.14(2) <i>OAC</i> 3745-54-14(A)(2)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Security system for a RCRA landfill (continued)	Must have a 24-hour surveillance system which continuously monitors and controls entry onto the active portion of the facility; or an artificial or natural barrier which completely surrounds the active portion of the facility; and a means to control entry, at all times, through the gates or other entrances to the active portion of the facility.		40 <i>CFR</i> 264.14(b) <i>OAC</i> 3745-54-14(B)
	Must post a sign with the legend “Danger – Unauthorized Personnel Keep Out” at each entrance to the active portion of a facility and at other locations in sufficient numbers to be seen from any approach in the active portion. Legend must be written in English and be legible from a distance of at least 25 ft.		40 <i>CFR</i> 264.14(c) <i>OAC</i> 3745-54-14(C)
Run-on/runoff control systems	A run-on control system must be designed, constructed, operated, and maintained that is capable of preventing flow onto the active portion of the landfill during peak discharge from at least a 25-year storm.	Construction and operation of a RCRA hazardous waste landfill— <b>applicable</b>	40 <i>CFR</i> 264.301(g) <i>OAC</i> 3745-57-03(G)
	Runoff management system must be able to collect and control the water volume from a runoff resulting from a 24-hour, 25-year storm event.		40 <i>CFR</i> 264.301(h) <i>OAC</i> 3745-57-03(H)
	Collection and holding facilities must be emptied or otherwise expeditiously managed after storm events to maintain design capacity of the system.		40 <i>CFR</i> 264.301(i) <i>OAC</i> 3745-57-03(I)
Wind dispersal control system	If the landfill contains any particulate matter which may be subject to wind dispersal, must cover or manage the landfill to control wind dispersal of particulate matter.	Operation of a RCRA hazardous waste landfill— <b>applicable</b>	40 <i>CFR</i> 264.301(j) <i>OAC</i> 3745-57-03(J)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Construction Quality Assurance (CQA) program	A CQA program is required for all surface impoundment, waste pile, and landfill units that are required to comply with paragraphs (C) or (D) of <i>OAC</i> 3745-56-21, 3745-56-51, and 3745-57-03. The program must ensure that the constructed unit meets or exceeds all design criteria and specifications, must be developed and implemented under the direction of a CQA officer who is a registered engineer, and must address the physical components listed in <i>OAC</i> 3745-54-19(A)(2) where applicable.		40 <i>CFR</i> 264.19(a) <i>OAC</i> 3745-54-19(A)
	Must develop and implement a written CQA plan as detailed in <i>OAC</i> 3745-54-19(B).		40 <i>CFR</i> 264.19(b) <i>OAC</i> 3745-54-19(B)
	The CQA program must include the observations, inspections, tests and measurements sufficient to meet the assurances listed in <i>OAC</i> 3745-54-19(C)(1)(a) to (c) and must include the test fill requirements detailed in <i>OAC</i> 3745-54-19(C)(2).		40 <i>CFR</i> 264.19(c) <i>OAC</i> 3745-54-19(C)
	Waste must not be received in a unit until the owner or operator has submitted to the Director by certified mail or hand delivery a certification signed by the CQA officer that the approved CQA plan has been successfully carried out and that the unit meets the requirements of paragraphs (C) or (D) of <i>OAC</i> 3745-56-21, 3745-56-51, or 3745-57-03; and the procedure in <i>OAC</i> 3745-50-58(L)(2)(b) has been completed. Documentation supporting the CQA officer's certification must be furnished to the Director upon request.		40 <i>CFR</i> 264.19(d) <i>OAC</i> 3745-54-19(D)
Postconstruction monitoring of liners, leak detection, run-on/runoff systems during active life of facility	Must inspect landfill weekly and after storm events to ensure proper functioning of the run-on and runoff control system, wind dispersal control systems, and the leachate collection and removal systems.	Operation of a RCRA hazardous waste landfill— <b>applicable</b>	40 <i>CFR</i> 264.303(b) <i>OAC</i> 3745-57-05(B)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Facility and equipment inspection, testing and maintenance	Must inspect facility for malfunctions and deterioration, operator errors, and discharges to identify any problems and remedy any deterioration or malfunction of equipment or structures on a schedule and in a manner that ensures that the problem does not lead to an environmental or human health hazard, as detailed in 40 <i>CFR</i> 264.15 [ <i>OAC</i> 3745-54-15].	Operation of a RCRA hazardous waste facility— <b>applicable</b>	40 <i>CFR</i> 264.15(a) – (d) <i>OAC</i> 3745-54-15(A) – (D)
	All facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, shall be tested and maintained as necessary to assure its proper operation in time of emergency.		40 <i>CFR</i> 264.33 <i>OAC</i> 3745-54-33
Required emergency equipment	All facilities shall be equipped with the following:		40 <i>CFR</i> 264.32 <i>OAC</i> 3745-54-32
	<ul style="list-style-type: none"> <li>An internal communications or alarm system capable of providing immediate emergency instruction to facility personnel</li> </ul>		40 <i>CFR</i> 264.32(A) <i>OAC</i> 3745-54-32(A)
	<ul style="list-style-type: none"> <li>A device capable of summoning emergency assistance from local police departments, fire departments, or Ohio EPA or local emergency response teams</li> </ul>		40 <i>CFR</i> 264.32(B) <i>OAC</i> 3745-54-32(B)
	<ul style="list-style-type: none"> <li>Portable fire extinguishers, fire control equipment, including but not limited to, special extinguishing equipment, such as that using foam, inert gas, or dry chemicals, spill control equipment, and decontamination equipment</li> </ul>		40 <i>CFR</i> 264.32(C) <i>OAC</i> 3745-54-32(C)
	<ul style="list-style-type: none"> <li>Water at adequate volume and pressure to supply water hose streams, or foam producing equipment, or automatic sprinklers, or water spray systems.</li> </ul>		40 <i>CFR</i> 264.32(D) <i>OAC</i> 3745-54-32(D)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Access to communications or alarm system	<p>Whenever hazardous waste is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation shall have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee, unless such a device is not required under 40 <i>CFR</i> 264.32 [<i>OAC</i> 3745-54-32].</p> <p>If there is only one employee on the premises while the facility is operating, such employee shall have immediate access to a device capable of summoning external emergency assistance, unless such a device is not required under 40 <i>CFR</i> 264.32 [<i>OAC</i> 3745-54-32].</p>	Operation of a RCRA hazardous waste facility— <b>applicable</b>	<p>40 <i>CFR</i> 264.34(a) <i>OAC</i> 3745-54-34(A)</p> <p>40 <i>CFR</i> 264.34(b) <i>OAC</i> 3745-54-34(B)</p>
Required aisle space	Shall maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, unless it can be satisfactorily demonstrated that aisle space is not needed for any of these purposes.	Operation of a RCRA hazardous waste facility— <b>applicable</b>	40 <i>CFR</i> 264.35 <i>OAC</i> 3745-54-35
Purpose and implementation of a contingency plan	<p>Substantive requirements will be met to minimize hazards to human health or the environment from fires, explosions or any unplanned sudden or nonsudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.</p> <p>Substantive requirements shall be implemented immediately whenever there is a fire, explosion or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.</p>	Operation of a RCRA hazardous waste facility— <b>applicable</b>	<p>40 <i>CFR</i> 264.51(a) <i>OAC</i> 3745-54-51(A)</p> <p>40 <i>CFR</i> 264.51(b) <i>OAC</i> 3745-54-51(B)</p>

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Content of contingency plan	Comply with the substantive requirements of §§264.51 and 264.56 [rules 3745-54-51 and 3745-54-56 of the Administrative Code] in response to fires, explosions, or any unplanned sudden or nonsudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility. 40 <i>CFR</i> 264.52(a) through (f) [ <i>OAC</i> 3745-54-52(A) through (F)] describes what must be included in the Plan.	Operation of a RCRA hazardous waste facility— <b>applicable</b>	40 <i>CFR</i> 264.52 <i>OAC</i> 3745-54-52
Emergency coordinator	At all times, there shall be at least one employee either on the facility premises or on call with responsibility for coordinating all internal emergency response measures. This coordinator shall be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the locations and characteristics of waste handled, the location of all records within the facility, and the facility layout. In addition, this person shall have the authority to commit the resources needed to implement the contingency plan.	Operation of a RCRA hazardous waste facility— <b>applicable</b>	40 <i>CFR</i> 264.55 <i>OAC</i> 3745-54-55
Emergency procedures	Whenever there is an imminent or actual emergency situation, the emergency coordinator, or his designee when the emergency coordinator is on call, must immediately implement the substantive requirements detailed in 40 <i>CFR</i> 264.56 [ <i>OAC</i> 3745-54-56].	Operation of a RCRA hazardous waste facility— <b>applicable</b>	40 <i>CFR</i> 264.56 <i>OAC</i> 3745-54-56
Training requirements	Facility personnel must successfully complete a program of classroom instruction or on-the-job training in accordance with the program outlined in 40 <i>CFR</i> 264.16 [ <i>OAC</i> 3745-54-16] and take part in an annual review of this initial training.	Operation of a RCRA hazardous waste facility— <b>applicable</b>	40 <i>CFR</i> 264.16 <i>OAC</i> 3745-54-16
Inventory requirements	Record on a map the exact location, and dimensions, including depth, of each cell in reference to permanently surveyed benchmarks and document the contents of each cell and the approximate location of each hazardous waste type within each cell.	Operation of a RCRA hazardous waste facility— <b>applicable</b>	40 <i>CFR</i> 264.309 <i>OAC</i> 3745-57-09



**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

Media/Location/Action <sup>a</sup>	Requirements <sup>b</sup>	Prerequisite	Citation
<i>Groundwater monitoring at a hazardous waste landfill</i>			
Construction of groundwater monitoring wells	All RCRA monitoring wells must be cased in a manner that maintains the integrity of the monitoring well bore hole. This casing must be screened or perforated and packed with gravel or sand, where necessary to enable collection of groundwater samples. The annular space above the sampling depth must be sealed to prevent contamination of groundwater and samples.	Construction of RCRA groundwater monitoring well— <b>applicable</b>	40 <i>CFR</i> 264.97(c) <i>OAC</i> 3745-54-97(C)
Groundwater monitoring program at a RCRA landfill	Must implement a groundwater monitoring program capable of determining the facility's impact on the quality of groundwater in the uppermost aquifer underlying the facility. Must comply with the substantive requirements of Subpart F 40 <i>CFR</i> 264.90 through 264.100 [ <i>OAC</i> 3745-54-90 through 3745-54-100] for the purposes of detecting, characterizing and responding to releases during the active life of the regulated unit, including the closure and postclosure periods.	Operation of a RCRA hazardous waste unit— <b>applicable</b>	40 <i>CFR</i> 264.90(a) and (c) <i>OAC</i> 3745-54-90(A) and (C)
Groundwater protection standard	Must ensure that hazardous constituents detected in the groundwater from a regulated unit do not exceed the concentration limits for MCLs in the uppermost aquifer underlying the waste management area beyond the point of compliance during the compliance period. Must comply with the substantive requirements for detection, compliance and corrective action monitoring, as appropriate.	Operation of a RCRA groundwater monitoring program— <b>applicable</b>	40 <i>CFR</i> 264.92 through 264.100 <i>OAC</i> 3745-54-92 through 54-100
General groundwater monitoring requirements for a RCRA landfill	<p>The groundwater monitoring system must consist of a sufficient number of wells, installed at appropriate locations and depths to yield samples from the uppermost aquifer that:</p> <ul style="list-style-type: none"> <li>• Represent the quality of background groundwater</li> </ul>	Operation of a RCRA detection monitoring program under 40 <i>CFR</i> 264.98— <b>applicable</b>	40 <i>CFR</i> 264.97(a) <i>OAC</i> 3745-54-97(A)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

Media/Location/Action <sup>a</sup>	Requirements <sup>b</sup>	Prerequisite	Citation
General groundwater monitoring requirements for a RCRA landfill (continued)	<ul style="list-style-type: none"> <li>Represent the quality of groundwater passing the point of compliance</li> <li>Allows for the detection of contamination when the hazardous waste or constituents have migrated from the waste management area to the uppermost aquifer.</li> </ul>		
Groundwater monitoring program for a RCRA landfill	Groundwater monitoring program must include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide a reliable indication of groundwater quality below the waste management area.	Operation of a RCRA detection monitoring program under 40 <i>CFR</i> 264.98— <b>applicable</b>	40 <i>CFR</i> 264.97(d) <i>OAC</i> 3745-54-97(D)
	Groundwater monitoring program must include sampling and analytical methods that are appropriate and accurately measure hazardous constituents in groundwater samples.		40 <i>CFR</i> 264.97(e) <i>OAC</i> 3745-54-97(E)
	Groundwater monitoring program must include a determination of the groundwater surface elevation each time groundwater is sampled.		40 <i>CFR</i> 264.97(f) <i>OAC</i> 3745-54-97(F)
Groundwater sample collection	The number and size of samples collected to establish background and measure groundwater quality at the point-of-compliance shall be appropriate for the form of statistical test employed following generally accepted statistical principles.	Operation of a RCRA detection monitoring program under 40 <i>CFR</i> 264.98— <b>applicable</b>	40 <i>CFR</i> 264.97(g) <i>OAC</i> 3745-54-97(G)
	Shall specify the statistical method, in conformance with 40 <i>CFR</i> 264.97(h) [ <i>OAC</i> 3745-54-97(H)], to be used in evaluating groundwater monitoring data for each hazardous constituent. Statistical method used must be protective of human health and the environment and must comply with performance standards outlined in 40 <i>CFR</i> 264.97(i) [ <i>OAC</i> 3745-54-97(I)].		40 <i>CFR</i> 264.97(h) <i>OAC</i> 3745-54-97(H) 40 <i>CFR</i> 264.97(i) <i>OAC</i> 3745-54-97(I)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Groundwater sample collection (continued)	Groundwater monitoring data collected in accordance with 40 <i>CFR</i> 264.97(g) [ <i>OAC</i> 3745-54-97(G)], including actual levels of constituents, must be maintained in the facility operating records.		40 <i>CFR</i> 264.97(j) <i>OAC</i> 3745-54-97(J)
Detection monitoring for a RCRA landfill	Must monitor for EPA-specified indicator parameters, waste constituents or reaction products that provide a reliable indication of the presence of hazardous constituents in groundwater.	Operation of a RCRA detection monitoring program under 40 <i>CFR</i> 264.98— <b>applicable</b>	40 <i>CFR</i> 264.98(a) <i>OAC</i> 3745-54-98(A)
	Must install a groundwater monitoring system at the compliance point as specified under 40 <i>CFR</i> 264.95 [ <i>OAC</i> 3745-54-95] that complies with 264.97(a)(2), (b), and (c) [ <i>OAC</i> 3745-54-97(A)].		40 <i>CFR</i> 264.98(b) <i>OAC</i> 3745-54-98(B)
	Must conduct a monitoring program for each EPA-specified chemical parameter and hazardous constituent in accordance with 40 <i>CFR</i> 264.97(g) [ <i>OAC</i> 3745-54-97(G)].		40 <i>CFR</i> 264.98(c) <i>OAC</i> 3745-54-98(C)
	Sampling frequency shall be sufficient to determine whether there is statistically significant evidence of contamination.		40 <i>CFR</i> 264.98(d) <i>OAC</i> 3745-54-98(D)
	Must determine the groundwater flow rate and direction in the uppermost aquifer at least annually.		40 <i>CFR</i> 264.98(e) <i>OAC</i> 3745-54-98(E)
	Must determine whether there is statistically significant evidence of contamination of any EPA-specified chemical parameter or hazardous constituent at a specified frequency.		40 <i>CFR</i> 264.98(f) <i>OAC</i> 3745-54-98(F)
	If there is statistically significant evidence of contamination at any monitoring well at the compliance point, must follow the substantive provisions of this subsection.		40 <i>CFR</i> 264.98(g) <i>OAC</i> 3745-54-98(G)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

Media/Location/Action <sup>a</sup>	Requirements <sup>b</sup>	Prerequisite	Citation
<i>Closure of a hazardous waste landfill</i>			
Closure performance standard for RCRA hazardous waste management units	Must close the facility in a manner that:	Closure of a RCRA hazardous waste management unit— <b>applicable</b>	40 <i>CFR</i> 264.111(a) <i>OAC</i> 3745-55-11(A)
	<ul style="list-style-type: none"> <li>Minimizes the need for further maintenance; and</li> </ul>		40 <i>CFR</i> 264.111(b) <i>OAC</i> 3745-55-11(B)
	<ul style="list-style-type: none"> <li>Controls, minimizes, or eliminates, to the extent necessary to protect human health and environment, postclosure escape of hazardous waste, hazardous constituents, contaminated runoff, or hazardous waste decomposition products to ground or surface waters or to the atmosphere; and</li> </ul>		40 <i>CFR</i> 264.111(c) <i>OAC</i> 3745-55-11(C)
	<ul style="list-style-type: none"> <li>Complies with the substantive closure requirements of 40 <i>CFR</i> 264 [<i>OAC</i> 3745-54 to 3745-57 and 3745-205] for particular type of facility including, but not limited to, requirements of Sections 264.178 (container storage area) [<i>OAC</i> 3745-55-78], 264.197 (tanks) [<i>OAC</i> 3745-55-97], 264.310 (landfills) [<i>OAC</i> 3745-57-10], and 264.554 (remediation waste piles) [<i>OAC</i> 3745-56-58].</li> </ul>		
Closure of RCRA landfill	Must have a closure plan identifying the steps necessary to perform partial and/or final closure of the facility at any point during its active life and must amend the plan as necessary.		40 <i>CFR</i> 264.112 <i>OAC</i> 3745-55-12
	During the partial and final closure periods, all contaminated equipment, structures, and soils must be properly disposed or decontaminated.		40 <i>CFR</i> 264.114 <i>OAC</i> 3745-55-14
	Must cover the landfill or cell with a final cover designed and constructed to:	Closure of a RCRA hazardous waste landfill— <b>applicable</b>	40 <i>CFR</i> 264.310 <i>OAC</i> 3745-57-10
	<ul style="list-style-type: none"> <li>Provide long-term minimization of migration of liquids through the closed landfill</li> <li>Function with minimum maintenance</li> </ul>		40 <i>CFR</i> 264.310(a)(1) <i>OAC</i> 3745-57-10(A)(1)  40 <i>CFR</i> 264.310(a)(2) <i>OAC</i> 3745-57-10(A)(2)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Closure of RCRA landfill (continued)	<ul style="list-style-type: none"> <li>Promote drainage and minimize erosion or abrasion of the cover</li> <li>Accommodate settling and subsidence so that integrity of the cover is maintained</li> <li>Have a permeability less than or equal to the permeability any bottom liner system or natural subsoils present.</li> </ul>		40 <i>CFR</i> 264.310(a)(3) <i>OAC</i> 3745-57-10(A)(3)  40 <i>CFR</i> 264.310(a)(4) <i>OAC</i> 3745-57-10(A)(4)  40 <i>CFR</i> 264.310(a)(5) <i>OAC</i> 3745-57-10(A)(5)
<b><i>Postclosure care of a landfill</i></b>			
Duration of postclosure care	Postclosure care must begin after closure and continue for at least 30 years after that date. The Director may shorten or extend the postclosure period.	Closure of a RCRA hazardous waste disposal unit— <b>applicable</b>	40 <i>CFR</i> 264.117(a) <i>OAC</i> 3745-55-17(A)
Continuation of security requirements	Continuation of the security requirements of 40 <i>CFR</i> 264.14 may be required during part or all of the postclosure period when hazardous wastes may remain exposed after completion of partial or final closure or access by the public or domestic livestock may pose a hazard to human health.	Closure of a RCRA hazardous waste disposal unit— <b>applicable</b>	40 <i>CFR</i> 264.117(b) <i>OAC</i> 3745-55-17(B)
Protection of disposal facility	Postclosure use of property must never be allowed to disturb the integrity of the final cover, liners, or any other components of the containment system or the facility's monitoring system unless the disturbance is necessary to the proposed use of the property and will not increase the potential hazard to human health or the environment or it is necessary to reduce a threat to human health or the environment.	Closure of a RCRA hazardous waste disposal unit— <b>applicable</b>	40 <i>CFR</i> 264.117(c) <i>OAC</i> 3745-55-17(C)
Postclosure plan	Must have a postclosure plan identifying the activities that will be carried on after closure of each disposal unit and the frequency of these activities, and must amend the plan as necessary. All postclosure care activities must be in accordance with the approved postclosure care plan.	Closure of a RCRA hazardous waste disposal unit— <b>applicable</b>	40 <i>CFR</i> 264.117(d) <i>OAC</i> 3745-55-17(D)  40 <i>CFR</i> 264.118 <i>OAC</i> 3745-55-18

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Postclosure plan (continued)	Within 90 days after receiving the final volume of hazardous wastes, must treat, remove from the unit or facility, or dispose of on site, all hazardous wastes in accordance with approved closure plan. The Director may approve a longer period in accordance with 40 <i>CFR</i> 264.113(a)(1) and (2) and 264.113(c) [ <i>OAC</i> 3745-55-13(A)(1) and (2) and 3745-55-13(C)].		40 <i>CFR</i> 264.113(a) and (c) <i>OAC</i> 3745-55-13(A) and (C)
	Must complete partial and final closure activities in accordance with the approved closure plan within 180 days after receiving the final volume of hazardous wastes at the hazardous waste management unit or facility. The Director may approve a longer closure period in accordance with 40 <i>CFR</i> 264.113(b)(1) and (2) and 264.113(c) [ <i>OAC</i> 3745-55-13(B)(1) and (2) and 3745-55-13(C)].		40 <i>CFR</i> 264.113(b) and (c) <i>OAC</i> 3745-55-13(B) and (C)
General postclosure care	After final closure, owner or operator must:	Closure of a RCRA hazardous waste landfill— <b>applicable</b>	40 <i>CFR</i> 264.310(b) <i>OAC</i> 3745-57-10(B)
	<ul style="list-style-type: none"> <li>Maintain the effectiveness and integrity of the final cover including making repairs to the cap as necessary to correct effects of settling, erosion, subsidence or other events</li> </ul>		40 <i>CFR</i> 264.310(b)(1) <i>OAC</i> 3745-57-10(B)(1)
	<ul style="list-style-type: none"> <li>Continue to operate the leachate collection and removal system until leachate is no longer detected</li> </ul>		40 <i>CFR</i> 264.310(b)(2) <i>OAC</i> 3745-57-10(B)(2)
	<ul style="list-style-type: none"> <li>Maintain and monitor the leachate detection system in accordance with the substantive requirements in 40 <i>CFR</i> 264.301(a)(3)(iv) and (4) and 40 <i>CFR</i> 264.303(c)</li> </ul>		40 <i>CFR</i> 264.310(b)(3) <i>OAC</i> 3745-57-10(B)(3)
	<ul style="list-style-type: none"> <li>Maintain and monitor a ground water monitoring system and comply with all other applicable provisions 40 <i>CFR</i> 264, Subpart F</li> </ul>		40 <i>CFR</i> 264.310(b)(4) <i>OAC</i> 3745-57-10(B)(4)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
General postclosure care (continued)	<ul style="list-style-type: none"> <li>Prevent run-on and runoff from eroding or otherwise damaging final cover</li> <li>Protect and maintain surveyed benchmarks used to locate waste cells.</li> </ul>		40 <i>CFR</i> 264.310(b)(5) <i>OAC</i> 3745-57-10(B)(5)
Monitoring of the leachate collection system postclosure	Must record the amount of liquids removed from the leak detection system at least monthly after the final cover is installed and thereafter as specified in 40 <i>CFR</i> 264.303(c)(2) [ <i>OAC</i> 3745-57-05(C)(2)].	Closure of a RCRA landfill— <b>applicable</b>	40 <i>CFR</i> 264.303(c)(2) <i>OAC</i> 3745-57-05(C)(1) to (3)
<b><i>Management of wastes in a CAMU</i></b>			
Designation and management of CAMUs	<p>CAMUs may be designated at a facility. CAMUs are areas within a facility that are used only for managing CAMU-eligible wastes for implementing corrective action or cleanup at the facility. A CAMU must be located within the contiguous property under the control of the owner or operator where the wastes to be managed in the CAMU originated. One or more CAMUs may be designated at a facility.</p> <p>CAMU-eligible waste means all non-hazardous and hazardous wastes, and all media (including ground water, surface water, soils, and sediments) and debris that are managed for implementing cleanup. As-generated wastes from ongoing industrial operations at a site are not CAMU-eligible wastes.</p>	Management of CAMU-eligible wastes within a CAMU located within the contiguous property under the control of the owner or operator where the wastes to be managed in the CAMU originated— <b>applicable</b>	40 <i>CFR</i> 264.552(a) <i>OAC</i> 3745-57-72(A)
			40 <i>CFR</i> 264.552(a)(1)(i) <i>OAC</i> 3745-57-72(A)(1)(a)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Designation and management of CAMUs (continued)	Wastes that would otherwise meet the description in paragraph (A)(1)(a) of this rule are not "CAMU-Eligible Wastes" where: (i) The wastes are hazardous wastes found during cleanup in intact or substantially intact containers, tanks, or other non-land-based units found above ground, unless the wastes are first placed in these units as part of cleanup, or the units are excavated during the course of cleanup; or (ii) The director exercises the discretion in paragraph (A)(2) of this rule to prohibit the wastes from management in a CAMU.		40 <i>CFR</i> 264.552(a)(1)(ii) <i>OAC</i> 3745-57-72(A)(1)(b)
	Notwithstanding paragraph (A)(1)(a) of this rule, where appropriate, as-generated non-hazardous waste may be placed in a CAMU where such waste is being used to facilitate treatment or the performance of the CAMU.		40 <i>CFR</i> 264.552(a)(1)(iii) <i>OAC</i> 3745-57-72(A)(1)(c)
	Director may prohibit placement of waste in a CAMU where he has information that such wastes have not been managed in compliance with land disposal treatment or unit design standards or that noncompliance with other applicable standards likely contributed to release of the waste.		40 <i>CFR</i> 264.552(a)(2) <i>OAC</i> 3745-57-72(A)(2)
	The placement of bulk or noncontainerized liquid hazardous waste or free liquids contained in hazardous waste (whether or not sorbents have been added) in any CAMU is prohibited except where placement of such wastes facilitates the remedy selected for the waste. Certain provisions of 40 <i>CFR</i> 264.314 [ <i>OAC</i> 3745-57-14] regarding liquids, as given in 40 <i>CFR</i> 264.552(a)(3) [ <i>OAC</i> 3745-57-72-(A)(3)] also apply.		40 <i>CFR</i> 264.552(a)(3) <i>OAC</i> 3745-57-72(A)(3)
	Placement of CAMU-eligible wastes into or within a CAMU does not constitute land disposal of hazardous wastes.		40 <i>CFR</i> 264.552(a)(4) <i>OAC</i> 3745-57-72(A)(4)



**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Designation and management of CAMUs (continued)	Consolidation or placement of CAMU-eligible wastes into or within a CAMU does not constitute creation of a unit subject to minimum technology requirements.		40 <i>CFR</i> 264.552(a)(5) <i>OAC</i> 3745-57-72(A)(5)
	May designate a regulated unit as a CAMU, or may incorporate a regulated unit into a CAMU, if the regulated unit is closed or closing and inclusion of the unit will enhance implementation of effective, protective, and reliable remedial actions for the facility.		40 <i>CFR</i> 264.552(b)(1) <i>OAC</i> 3745-57-72(B)(1)
	The hazardous waste rules that applied to the regulated unit will continue to apply to that portion of the CAMU after incorporation into the CAMU.		40 <i>CFR</i> 264.552(b)(2) <i>OAC</i> 3745-57-72(B)(2)
	A CAMU may be used for the management of CAMU-eligible waste in accordance with the following requirements of 40 <i>CFR</i> 264.552 ( <i>OAC</i> 3745-57-72):		40 <i>CFR</i> 264.552(c)(1) <i>OAC</i> 3745-57-72(C)(1)
	<ul style="list-style-type: none"> <li>CAMU shall facilitate implementation of reliable, effective, protective and cost-effective remedies.</li> </ul>		
	<ul style="list-style-type: none"> <li>Waste management activities shall not create unacceptable risks or to the environment resulting from exposure to hazardous wastes or hazardous constituents.</li> </ul>		40 <i>CFR</i> 264.552(c)(2) <i>OAC</i> 3745-57-72(C)(2)
	<ul style="list-style-type: none"> <li>CAMU shall include uncontaminated areas of the facility, only if including such areas for the purpose of managing CAMU-eligible waste is more protective than management of such wastes at contaminated areas of the facility.</li> </ul>		40 <i>CFR</i> 264.552(c)(3) <i>OAC</i> 3745-57-72(C)(3)
	<ul style="list-style-type: none"> <li>Areas within the CAMU, where wastes remain in place after closure of the CAMU, shall be managed and contained so as to minimize future releases, to the extent practicable.</li> </ul>		40 <i>CFR</i> 264.552(c)(4) <i>OAC</i> 3745-57-72(C)(4)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Designation and management of CAMUs (continued)	<ul style="list-style-type: none"> <li>CAMU shall expedite the timing of remedial activity implementation, when appropriate and practicable.</li> </ul>		40 <i>CFR</i> 264.552(c)(5) <i>OAC</i> 3745-57-72(C)(5)
	<ul style="list-style-type: none"> <li>CAMU shall enable the use, when appropriate, of treatment technologies (including innovative technologies) to enhance the long-term effectiveness of remedial actions by reducing the toxicity, mobility, or volume of wastes that will remain in place after closure of the CAMU and</li> </ul>		40 <i>CFR</i> 264.552(c)(6) <i>OAC</i> 3745-57-72(C)(6)
	<ul style="list-style-type: none"> <li>CAMU shall, to the extent practicable, minimize the land area of the facility upon which wastes will remain in place after closure of the CAMU.</li> </ul>		40 <i>CFR</i> 264.552(c)(7) <i>OAC</i> 3745-57-72(C)(7)
	To designate a CAMU in accordance with the criteria in 40 <i>CFR</i> 264.552 ( <i>OAC</i> 3745-57-72), knowledge of the waste must include:		40 <i>CFR</i> 264.552(d) <i>OAC</i> 3745-57-72(D)
	<ul style="list-style-type: none"> <li>The origin of the waste and how it was subsequently managed (including a description of the timing and circumstances surrounding the disposal and/or release);</li> </ul>		40 <i>CFR</i> 264.552(d)(1) <i>OAC</i> 3745-57-72(D)(1)
	<ul style="list-style-type: none"> <li>Whether the waste was listed or identified as hazardous at the time of disposal and/or release; and</li> </ul>		40 <i>CFR</i> 264.552(d)(2) <i>OAC</i> 3745-57-72(D)(2)
	<ul style="list-style-type: none"> <li>Whether disposal and/or release of the waste occurred before or after the land disposal requirements of 40 <i>CFR</i> 268 (<i>OAC</i> 3745-270) were in effect for the waste listing or characteristic.</li> </ul>		40 <i>CFR</i> 264.552(d)(3) <i>OAC</i> 3745-57-72(D)(3)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Design, operation, and closure of a CAMU	Director will designate the requirements for a CAMU, to include the following: <ul style="list-style-type: none"> <li>• Areal configuration of the CAMU</li> <li>• Specification of applicable design, operation, treatment and closure requirements in the hazardous waste rules.</li> </ul>	Management of CAMU-eligible wastes within a CAMU located within the contiguous property under the control of the owner or operator where the wastes to be managed in the CAMU originated— <b>applicable</b>	40 <i>CFR</i> 264.552(e) <i>OAC</i> 3745-57-72(E)
	Shall comply with the designated substantive minimum design, operation, treatment, and closure standards for a CAMU, including the following: <ul style="list-style-type: none"> <li>• Liners and leachate collection</li> <li>• Treatment of principal hazardous constituents</li> <li>• Ground water monitoring</li> <li>• Capping requirements</li> <li>• Closure and postclosure care.</li> </ul> <p>CAMUs into which wastes are placed where all wastes have constituent levels at or below remedial levels or goals applicable to the site do not have to comply with the liner requirements at 40 <i>CFR</i> 264.552(e)(3)(i) [<i>OAC</i> 3745-57-72(E)(3)(a)], the capping requirements at 40 <i>CFR</i> 264.552 (e)(6)(iv) [<i>OAC</i> 3745-57-72(E)(6)(d)], or the ground water monitoring requirements at 40 <i>CFR</i> 264.552 (e)(5) [<i>OAC</i> 3745-57-72(E)(5)].</p>		40 <i>CFR</i> 264.552(e)(3) <i>OAC</i> 3745-57-72(E)(3)  40 <i>CFR</i> 264.552(e)(3)(i) <i>OAC</i> 3745-57-72(E)(3)(a) 40 <i>CFR</i> 264.552(e)(4) <i>OAC</i> 3745-57-72(E)(4) 40 <i>CFR</i> 264.552(e)(5) <i>OAC</i> 3745-57-72(E)(5) 40 <i>CFR</i> 264.552(e)(6)(iv) <i>OAC</i> 3745-57-72(E)(6)(d) 40 <i>CFR</i> 264.552(e)(6) <i>OAC</i> 3745-57-72(E)(6) 40 <i>CFR</i> 264.552(g) <i>OAC</i> 3745-57-72(G)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Designation, design, operation, and closure of a CAMU used for storage and/or treatment only	CAMUs used for storage and/or treatment only are CAMUs in which wastes will not remain after closure. Such CAMUs must be designated in accordance with all of the requirements 40 <i>CFR</i> 264.552 [ <i>OAC</i> 3745-57-72], except as follows:	Management of CAMU-eligible wastes within a CAMU used for storage and/or treatment only— <b>applicable</b>	40 <i>CFR</i> 264.552(f) <i>OAC</i> 3745-57-72(F)
	<ul style="list-style-type: none"> <li>Such CAMUs that operate in accordance with time limits established for hazardous waste staging piles are subject to requirements for staging piles in lieu of performance standards and requirements for CAMUs.</li> </ul>		40 <i>CFR</i> 264.552(f)(1) <i>OAC</i> 3745-57-72(F)(1)
	<ul style="list-style-type: none"> <li>Such CAMUs that do not operate in accordance with time limits established for hazardous waste staging piles are subject to a time limit, as established by the Director, that is no longer than necessary to achieve a timely remedy selected for the waste, and are subject to requirements for staging piles in lieu of performance standards and requirements for CAMUs.</li> </ul>		40 <i>CFR</i> 264.552(f)(2) <i>OAC</i> 3745-57-72(F)(2)
	The designation of a CAMU does not change Ohio EPA's existing authority to address clean-up levels, media-specific points of compliance to be applied to remediation at a facility, or other remedy selection decisions.		<i>OAC</i> 3745-57-72(K)
<b><i>Hazardous waste generation, characterization, and segregation</i></b>			
Characterization of solid waste ( <i>all primary and secondary wastes</i> )	Must determine if solid waste is hazardous or is excluded under 40 <i>CFR</i> 261.4 [ <i>OAC</i> 3745-51-04]; and	Generation of solid waste as defined in 40 <i>CFR</i> 261.2— <b>applicable</b>	40 <i>CFR</i> 262.11(a) <i>OAC</i> 3745-52-11(A)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Characterization of solid waste ( <i>all primary and secondary wastes</i> ) (continued)	Must determine if waste is listed as a hazardous waste in 40 <i>CFR</i> 261 [OAC 3745-51-30 to 3745-51-35], or	Generation of solid waste, which is not excluded under 40 <i>CFR</i> 261.4— <b>applicable</b>	40 <i>CFR</i> 262.11(b) OAC 3745-52-11(B)
	Must determine whether the waste is identified in Subpart C of 40 <i>CFR</i> 261 [OAC 3745-51-20 through 3745-51-24], characterizing the waste by using prescribed testing methods or applying generator knowledge based on information regarding material or processes used.	Generation of solid waste that is not listed in Subpart D of 40 <i>CFR</i> 261 and not excluded under 40 <i>CFR</i> 261.4— <b>applicable</b>	40 <i>CFR</i> 262.11(c) OAC 3745-52-11(C)
	Must refer to 40 <i>CFR</i> 261, 262, 264, 265, 266, 268, and 273 [OAC 3745-51, 3745-54 to 3745-57, 3745-65 to 3745-69, 3745-205, 3745-256, 3745-266, 3745-270, and 3745-273] for possible exclusions or restrictions pertaining to management of the specific waste.	Generation of solid waste that is determined to be hazardous— <b>applicable</b>	40 <i>CFR</i> 262.11(d) OAC 3745-52-11(D)
Characterization of hazardous waste	Must obtain a detailed chemical and physical analysis of a representative sample of the waste(s) that, at a minimum, contains all the information which must be known to treat, store, or dispose of the waste in accordance with 40 <i>CFR</i> 264 and 268 [OAC 3745-54 to 3745-57, 3745-205, and 3745-270].	Generation of RCRA hazardous waste for storage, treatment, or disposal— <b>applicable</b>	40 <i>CFR</i> 264.13(a)(1) and (2) OAC 3745-54-13(A) (1) and (2)
Determinations for land disposal of hazardous waste	Must determine if the waste meets the treatment standards in 40 <i>CFR</i> 268.40, 268.45, or 268.49 [OAC 3745-270-40, 3745-270-45, and 3745-270-49] by testing in accordance with prescribed methods or use of generator knowledge of waste.	Generation of RCRA hazardous waste for storage, treatment, or disposal— <b>applicable</b>	40 <i>CFR</i> 268.7(a) OAC 3745-270-07(A)
	Treatment facilities must test their wastes according to the frequency specified in their waste analysis plans to determine if the waste meets the treatment standards in 40 <i>CFR</i> 268.40, 268.45, or 268.49 [OAC 3745-270-40, 3745-270-45, and 3745-270-49] prior to disposal.	Treatment of RCRA hazardous waste prior to disposal— <b>applicable</b>	40 <i>CFR</i> 268.7(b) OAC 3745-270-07(B)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Determinations for land disposal of hazardous waste (continued)	Must determine each EPA Hazardous Waste Number (waste code) to determine the applicable treatment standards under 40 <i>CFR</i> 268.40 et seq. [ <i>OAC</i> 3745-270-40 et seq.].	Generation of RCRA hazardous waste for storage, treatment, or disposal— <b>applicable</b>	40 <i>CFR</i> 268.9(a) <i>OAC</i> 3745-270-09(A)
	Must determine the underlying hazardous constituents [as defined in 40 <i>CFR</i> 268.2(i) and <i>OAC</i> 3745-270-02] in the waste.	Generation of RCRA characteristically hazardous waste (and is not D001 nonwastewaters treated by CMBST, RORGS, or POLYM of Section 268.42, Table 1) for storage, treatment, or disposal— <b>applicable</b>	40 <i>CFR</i> 268.9(a) <i>OAC</i> 3745-270-09(A)
	Must determine whether the waste meets other applicable treatment standards under 40 <i>CFR</i> 268.9 [ <i>OAC</i> 3745-270-09] for characteristic wastes.	Generation of RCRA characteristically hazardous waste— <b>applicable</b>	40 <i>CFR</i> 268.9(b) to (d) <i>OAC</i> 3745-270-09(B) to (C)
Characterization and management of wastewater (e.g., decon water)	On-site wastewater treatment units (including tank systems, conveyance systems, and ancillary equipment used to treat, store or convey wastewater to the wastewater treatment facility) are exempt from the requirements of RCRA Subtitle C standards.	On-site wastewater treatment units subject to regulation under Section 402 or Section 307(b) of the CWA— <b>applicable</b>	40 <i>CFR</i> 264.1(g)(6) <i>OAC</i> 3745-54-01(G)(6)
Characterization and management of industrial wastewater	Industrial wastewater discharges that are point source discharges subject to regulation under Section 402 of the CWA, as amended, are not solid wastes for the purpose of hazardous waste management.	Generation of industrial wastewater for discharge— <b>applicable</b>	40 <i>CFR</i> 261.4(a)(2) <i>OAC</i> 3745-51-04(A)(2)
Segregation of scrap metal for recycle	Material is not subject to RCRA requirements for generators, transporters, and storage facilities under 40 <i>CFR</i> Parts 262 through 266, 268, 270, or 124 [ <i>OAC</i> 3745-50-40 to 3745-50-235 or 3745-52, -53, -54 to -57, -65 to -69, -205, -256, -266, and -270].	Scrap metal, as defined in 40 <i>CFR</i> 261.1(c)(6) intended for recycle— <b>applicable</b>	40 <i>CFR</i> 261.6(a)(3)(ii) <i>OAC</i> 3745-51-06(A)(3)(b)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Management of recyclable materials for precious metal recovery	Recyclable materials being collected, transported or stored that are being reclaimed to recover economically significant amounts of gold, silver, platinum, palladium, iridium, osmium, rhodium, ruthenium, or any combination of these must be managed in accordance with the substantive requirements of 40 <i>CFR</i> 266.70 [ <i>OAC</i> 3745-266-70].	Management of recyclable materials for precious metal recovery— <b>applicable</b>	40 <i>CFR</i> 266.70 <i>OAC</i> 3745-266-70
Management of spent lead acid batteries being reclaimed	Spent lead acid batteries being collected, transported and stored prior to regeneration must be managed in accordance with particular hazardous waste requirements depending on permit status and whether they are being reclaimed through regeneration or in other ways. Management options are detailed in 40 <i>CFR</i> 266.80 [ <i>OAC</i> 3745-266-80]. Spent lead acid batteries can also be managed as universal wastes under 40 <i>CFR</i> 273 [ <i>OAC</i> 3745-273].	Management of spent lead acid batteries being reclaimed— <b>applicable</b>	40 <i>CFR</i> 266.80 <i>OAC</i> 3745-266-80
<b><i>Hazardous waste storage</i></b>			
Storage of hazardous wastes restricted from land disposal	Prohibits storage of hazardous waste restricted from land disposal unless the generator stores such waste in tanks, containers, or containment buildings on site solely for the purpose of accumulating such quantities as necessary to facilitate proper recovery, treatment, or disposal.	Accumulation of hazardous wastes restricted from land disposal solely for purpose of accumulation of quantities as necessary to facilitate proper recovery, treatment, or disposal— <b>applicable</b>	40 <i>CFR</i> 268.50 <i>OAC</i> 3745-270-50
Temporary storage and accumulation of hazardous waste in containers on site	A generator may accumulate hazardous waste at the facility provided that: <ul style="list-style-type: none"> <li>The waste is placed in containers that comply with 40 <i>CFR</i> 265.171-173 (Subpart I) [<i>OAC</i> 3745-66-70 to -73]</li> </ul>	Accumulation of RCRA hazardous waste on site as defined in 40 <i>CFR</i> 260.10— <b>applicable</b>	40 <i>CFR</i> 262.34(a)(1)(i) <i>OAC</i> 3745-52-34(A)(1)(a)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

Media/Location/Action <sup>a</sup>	Requirements <sup>b</sup>	Prerequisite	Citation
Temporary storage and accumulation of hazardous waste in containers on site (continued)	<ul style="list-style-type: none"> <li>Container is marked with the date upon which each period of accumulation begins</li> </ul>		40 <i>CFR</i> 262.34(a)(2) <i>OAC</i> 3745-52-34(A)(2)
	<ul style="list-style-type: none"> <li>Container is marked with the words “hazardous waste”</li> </ul>		40 <i>CFR</i> 262.34(a)(3) <i>OAC</i> 3745-52-34(A)(3)
	The generator complies with the requirements in Subparts C and D in 40 <i>CFR</i> Part 265, with §265.16, and with 40 <i>CFR</i> 268.7(a)(5) [ <i>OAC</i> 3745-270-07(A)(5); <i>OAC</i> 3745-65-16; <i>OAC</i> 3745-65-30 to <i>OAC</i> 3745-65-37; and <i>OAC</i> 3745-65-50 to <i>OAC</i> 3745-65-56].	Accumulation of RCRA hazardous waste on site as defined in 40 <i>CFR</i> 260.10— <b>applicable</b>	40 <i>CFR</i> 262.34(a)(4) <i>OAC</i> 3745-52-34(A)(4)
	Generator is exempt from all requirements in Subparts G and H of 40 <i>CFR</i> Part 265, except for §§ 265.111 and 265.114 [ <i>OAC</i> 3745- 66-10 to <i>OAC</i> 3745-66-21 and <i>OAC</i> 3745-66-40 to <i>OAC</i> 3745-66-48 except for paragraphs (A) and (B) of <i>OAC</i> 3745-66-11 and <i>OAC</i> 3745-66-14].		40 <i>CFR</i> 262.34(a)(1) <i>OAC</i> 3745-52-34(A)(1)(e)
	Container must be marked with either the words “Hazardous Wastes” or with other words that identify the contents.	Accumulation of 55 gal or less of RCRA hazardous waste or 1 qt or less of acutely hazardous waste at or near any point of generation— <b>applicable</b>	40 <i>CFR</i> 262.34(c)(1)(ii) <i>OAC</i> 3745-52-34(C)(1)(b)
	For the excess waste, must comply within 3 days with the requirements of <i>OAC</i> 3745-52-34(A) or other applicable provisions of Chapter 3745-52 of the Administrative Code. During the 3-day period, comply with <i>OAC</i> 3745-52-34(C)(1)(a) and (b). Must mark container holding excess accumulation with the date the excess accumulation began.	Accumulation of more than 55 gal of hazardous waste or more than 1 qt of acutely hazardous waste at or near any point of generation— <b>applicable</b>	40 <i>CFR</i> 262.34(c)(2) <i>OAC</i> 3745-52-34(C)(2)



**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Accumulation of rejected shipments of hazardous waste	A generator who receives a shipment of hazardous waste back as a rejected load or residue from a facility in accordance with a manifest discrepancy may accumulate the waste on site in accordance with paragraphs (a) and (b) or (d), (e) and (f) of 40 <i>CFR</i> 262.34 [(A) and (B) or (D), (E), and (F) of <i>OAC</i> 3745-52-34] depending on the amount of hazardous waste on site in that calendar month.	Accumulation of RCRA hazardous waste on site as defined in 40 <i>CFR</i> 260.10— <b>applicable</b>	40 <i>CFR</i> 262.34(m) <i>OAC</i> 3745-52-34(M)
Management of hazardous waste stored in containers	If container is not in good condition (e.g., severe rusting, structural defects) or if it begins to leak, must transfer waste into container in good condition.	Storage of RCRA hazardous waste in containers— <b>applicable</b>	40 <i>CFR</i> 264.171 <i>OAC</i> 3745-55-71
	Use container made or lined with materials compatible with waste to be stored so that the ability of the container is not impaired.		40 <i>CFR</i> 264.172 <i>OAC</i> 3745-55-72
	Keep containers closed during storage, except to add/remove waste.		40 <i>CFR</i> 264.173(a) <i>OAC</i> 3745-55-73(A)
	Open, handle, and store containers in a manner that will not cause containers to rupture or leak.		40 <i>CFR</i> 264.173(b) <i>OAC</i> 3745-55-73(B)
Inspection of RCRA container storage area	At least weekly, must inspect areas where containers are stored, looking for leaking containers and for deterioration of containers and the containment system caused by corrosion or other factors.	Storage of RCRA hazardous waste in containers— <b>applicable</b>	40 <i>CFR</i> 264.174 <i>OAC</i> 3745-55-74
Operation of a RCRA container storage area	Area must be sloped or otherwise designed and operated to drain liquid from precipitation, or containers must be elevated or otherwise protected from contact with accumulated liquid.	Storage in containers of RCRA hazardous waste that do not contain free liquids— <b>applicable</b>	40 <i>CFR</i> 264.175(c) <i>OAC</i> 3745-55-75(C)
Storage of RCRA hazardous waste with free liquids in containers	Area must have a containment system designed and operated in accordance with 40 <i>CFR</i> 264.175(b) [ <i>OAC</i> 3745-55-75(B)] as follows:	Storage of RCRA hazardous waste with free liquids or F020 to F023, F026, and F027 in containers— <b>applicable</b>	40 <i>CFR</i> 264.175(a) and (d) <i>OAC</i> 3745-55-75(A) and (D)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

Media/Location/Action <sup>a</sup>	Requirements <sup>b</sup>	Prerequisite	Citation
Storage of RCRA hazardous waste with free liquids in containers (continued)	<ul style="list-style-type: none"> <li>A base must underlie the containers which is free of cracks or gaps and is sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed.</li> </ul>		40 <i>CFR</i> 264.175(b)(1) <i>OAC</i> 3745-55-75(B)(1)
	<ul style="list-style-type: none"> <li>A base must be sloped or the containment system must be otherwise designed and operated to drain and remove liquids resulting from leaks, spills, or precipitation, unless the containers are elevated or are otherwise protected from contact with accumulated liquids.</li> </ul>		40 <i>CFR</i> 264.175(b)(2) <i>OAC</i> 3745-55-75(B)(2)
	<ul style="list-style-type: none"> <li>The system must have sufficient capacity to contain 10% of the volume of containers or volume of largest container, whichever is greater.</li> </ul>		40 <i>CFR</i> 264.175(b)(3) <i>OAC</i> 3745-55-75(B)(3)
	<ul style="list-style-type: none"> <li>Run-on into the system must be prevented unless the collection system has sufficient capacity to contain along with volume required for containers.</li> </ul>		40 <i>CFR</i> 264.175(b)(4) <i>OAC</i> 3745-55-75(B)(4)
	<ul style="list-style-type: none"> <li>Spilled or leaked waste and accumulated precipitation must be removed from the sump or collection area in as timely a manner as is necessary to prevent overflow.</li> </ul>		40 <i>CFR</i> 264.175(b)(5) <i>OAC</i> 3745-55-75(B)(5)
Storage of incompatible waste in containers	Containers holding ignitable or reactive waste must be located at least 15 m (50 ft) from the facility's property line.	Storage of ignitable or reactive RCRA hazardous waste in containers— <b>applicable</b>	40 <i>CFR</i> 264.176 <i>OAC</i> 3745-55-76
	Must not place incompatible wastes in same container unless comply with 40 <i>CFR</i> 264.17(b) [ <i>OAC</i> 3745-54-17(B)].	Storage of “incompatible” RCRA hazardous wastes in containers— <b>applicable</b>	40 <i>CFR</i> 264.177(a) <i>OAC</i> 3745-55-77(A)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Storage of incompatible waste in containers (continued)	Waste shall not be placed in an unwashed container that previously held an incompatible waste or material.		40 <i>CFR</i> 264.177(b) <i>OAC</i> 3745-55-77(B)
	A container holding incompatible wastes must be separated from any waste or nearby materials or must protect them from one another by using a dike, berm, wall, or other device.		40 <i>CFR</i> 264.177(c) <i>OAC</i> 3745-55-77(C)
Temporary storage or treatment of hazardous waste in tanks	Assess tank systems integrity as detailed in 40 <i>CFR</i> 264.191 [ <i>OAC</i> 3745-55-91] and ensure that existing and new tanks have sufficient structural strength that is compatible with the waste to prevent collapse or rupture.	Storage of RCRA hazardous waste in a tank (any portable device in which a material is stored, transported, or disposed of or handled) for a period greater than 90 days before treatment, disposal, or storage elsewhere— <b>applicable</b>	40 <i>CFR</i> 264.191 <i>OAC</i> 3745-55-91
	Design and install tanks and tank systems in accordance with specifications detailed in 40 <i>CFR</i> 264.192 [ <i>OAC</i> 3745-55-92].		40 <i>CFR</i> 264.192 <i>OAC</i> 3745-55-92
	Provide tanks with secondary containment leak detection system controls in accordance with 40 <i>CFR</i> 264.193 [ <i>OAC</i> 3745-55-93].		40 <i>CFR</i> 264.193 <i>OAC</i> 3745-55-93
	Operate tanks and tank systems in accordance with the general operating requirements detailed in 40 <i>CFR</i> 264.194 [ <i>OAC</i> 3745-55-94].		40 <i>CFR</i> 264.194 <i>OAC</i> 3745-55-94
	Must inspect tanks and tank systems in accordance with the schedules detailed in 40 <i>CFR</i> 264.195 [ <i>OAC</i> 3745-55-95].		40 <i>CFR</i> 264.195 <i>OAC</i> 3745-55-95
	Respond to any leaks or spills from tanks systems in accordance with the response actions detailed in 40 <i>CFR</i> 264.196 [ <i>OAC</i> 3745-55-96] and remove unfit tanks from further use.		40 <i>CFR</i> 264.196 <i>OAC</i> 3745-55-96
	Presents general precautions to be taken to prevent accidental ignition or reaction of ignitable or reactive wastes that are treated or stored in tanks.	Storage of ignitable or reactive hazardous wastes in tanks— <b>applicable</b>	40 <i>CFR</i> 264.198 <i>OAC</i> 3745-55-98

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Temporary storage or treatment of hazardous waste in tanks (continued)	Presents general precautions to be taken when dealing with incompatible wastes treated or stored in tanks.	Storage of incompatible hazardous wastes in tanks— <b>applicable</b>	40 <i>CFR</i> 264.199 <i>OAC</i> 3745-55-99
	Less stringent minimum technology requirements may be applied to tanks designated as TUs. Protection of human health and the environment must be ensured.	Management of RCRA or CERCLA remediation wastes in tanks designated as TUs— <b>applicable</b>	40 <i>CFR</i> 264.553 <i>OAC</i> 3745-57-73
Temporary storage of RCRA remediation waste in a staging pile	May be temporarily stored (including mixing, sizing, blending, or other similar physical operations intended to prepare the wastes for subsequent management or treatment) at a facility provided that the staging pile:	Accumulation of nonflowing hazardous remediation waste (or remediation waste otherwise subject to land disposal restrictions) as defined in 40 <i>CFR</i> 260.10 ( <i>OAC</i> 3745-50-10)— <b>applicable</b>	40 <i>CFR</i> 264.554 <i>OAC</i> 3745-57-74
	<ul style="list-style-type: none"> <li>Is located within the contiguous property under the control of the owner/operator where the wastes to be managed in the staging pile originated. Staging piles must be designated by the director.</li> </ul>		40 <i>CFR</i> 264.554(a) <i>OAC</i> 3745-57-74(A)
	<ul style="list-style-type: none"> <li>Staging piles may be used to store hazardous remediation waste (or remediation waste otherwise subject to land disposal restrictions) if the standards and design criteria are followed that the director has designated for that staging pile.</li> </ul>		40 <i>CFR</i> 264.554(b) <i>OAC</i> 3745-57-74(B)
	<ul style="list-style-type: none"> <li>Knowledge of the waste pile must be sufficient to establish the required standards</li> </ul>		40 <i>CFR</i> 264.554(c) <i>OAC</i> 3745-57-74(C)
	Staging pile must be designed to:		40 <i>CFR</i> 264.554(d)(1)(i) <i>OAC</i> 3745-57-74(D)(1)(a)
	<ul style="list-style-type: none"> <li>Facilitate a reliable, effective, and protective remedy</li> </ul>		

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Temporary storage of RCRA remediation waste in a staging pile (continued)	<ul style="list-style-type: none"> <li>Prevent or minimize releases of hazardous wastes and constituents into the environment and minimize or adequately control cross-media transfer, as necessary, to protect human health and the environment (e.g., through the use of liners, covers, run-on/runoff controls, as appropriate).</li> </ul>		40 <i>CFR</i> 264.554(d)(1)(ii) <i>OAC</i> 3745-57-74(D)(1)(b)
	<ul style="list-style-type: none"> <li>The staging pile must not operate for more than 2 years, except when the director grants an operating term extension. The 2-year limit, or other operating term specified by the director in the permit, closure plan, or order, is measured from the first time remediation waste is placed into a staging pile. Must maintain a record of the date when remediation waste is first placed into the staging pile for the life of the permit, closure plan, or order, or for 3 years, whichever is longer.</li> </ul>		40 <i>CFR</i> 264.554(d)(1)(iii) <i>OAC</i> 3745-57-74(D)(1)(c)
	In setting the design standards for staging piles, the director will consider the following factors:		40 <i>CFR</i> 264.554(d)(2) <i>OAC</i> 3745-57-74(D)(2)
	<ul style="list-style-type: none"> <li>Length of time the pile will be in operation</li> <li>Volumes of wastes you intend to store in the pile</li> <li>Physical and chemical characteristics of the wastes to be stored in the unit;</li> <li>Potential for releases from the unit;</li> <li>Hydrogeological and other relevant environmental conditions at the facility that may influence the migration of any potential releases; and</li> <li>Potential for human and environmental exposure to potential releases from the unit.</li> </ul>		

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Storage of ignitable or reactive waste in a staging pile	Must not place ignitable or reactive remediation waste in a staging pile unless: <ul style="list-style-type: none"> <li>Waste has been treated, rendered, or mixed before it was placed in the staging pile so that the waste is no longer ignitable or reactive under §261.21 or §261.31 (<i>OAC</i> 3745-52-21 or 52-31), and 40 <i>CFR</i> 264.17(b) [<i>OAC</i> 3745-54-17(B)] has been complied with; or</li> <li>Remediation waste is managed to protect it from exposure to any material or condition that may cause it to ignite or react.</li> </ul>	Storage of ignitable or reactive remediation waste in staging pile— <b>applicable</b>	40 <i>CFR</i> 264.554(e) <i>OAC</i> 3745-57-74(E)  40 <i>CFR</i> 264.554(e)(i) <i>OAC</i> 3745-57-74(E)(1)   40 <i>CFR</i> 264.554(e)(ii) <i>OAC</i> 3745-57-74(E)(2)
	Storage of incompatible waste in a staging pile	Must not place incompatible wastes in same pile unless comply with 40 <i>CFR</i> 264.17(b) [ <i>OAC</i> 3745-54-17(B)].	Storage of “incompatible” remediation waste in staging pile— <b>applicable</b>
	Incompatible wastes must be separated from any waste or nearby materials or must protect them from one another by using a dike, berm, wall, or other device.		40 <i>CFR</i> 264.554(f)(2) <i>OAC</i> 3745-57-74(F)(2)
	Must not pile remediation waste on the same base where incompatible wastes or materials were previously piled, unless the base has been decontaminated sufficiently to comply with 40 <i>CFR</i> 274.17(b) [ <i>OAC</i> 3745-54-17(B)].		40 <i>CFR</i> 264.554(f)(3) <i>OAC</i> 3745-57-74(F)(3)
	Placing hazardous remediation wastes into a staging pile does not constitute land disposal of hazardous waste or create a unit that is subject to the minimum technological requirements of Section 3004(o) of RCRA.	Placement of hazardous remediation wastes into a staging pile— <b>applicable</b>	40 <i>CFR</i> 264.554(g) <i>OAC</i> 3745-57-74(G)
	A staging pile may operate for up to 2 years after hazardous remediation waste is first placed into the pile.		40 <i>CFR</i> 264.554(h) <i>OAC</i> 3745-57-74(H)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Storage of incompatible waste in a staging pile (continued)	The director may grant one operating term extension of up to 180 days beyond the operating term limit allowed under 40 <i>CFR</i> 264.554(h) [ <i>OAC</i> 3745-57-74(H)] if he determines that continued operation of the staging pile will not pose a threat to human health and the environment; and that it is necessary to ensure timely and efficient implementation of remedial actions at the facility. The director may, as a condition of the extension, specify further standards and design criteria, as necessary, to ensure protection of human health and the environment.		40 <i>CFR</i> 264.554(i) <i>OAC</i> 3745-57-74(I)
	To modify a closure plan to incorporate a staging pile or staging pile operating term extension, must follow the applicable requirements under §264.112(c) or §265.112(c) [ <i>OAC</i> 3745-55-12(C) or <i>OAC</i> 3745-66-12(C)]. To modify an order to incorporate a staging pile or staging pile operating term extension, must follow the terms of the order.		40 <i>CFR</i> 264.554(l)(3) and (4) <i>OAC</i> 3745-57-74(L) (3) and (4)
	<i>OAC</i> 3745-56-50 to 3745-56-59 applies to owners and operators of facilities that store or treat hazardous waste in piles, except as <i>OAC</i> 3745-54-01 provides otherwise.	Storage of RCRA hazardous waste in a waste pile— <b>applicable</b>	40 <i>CFR</i> 264.250(a) <i>OAC</i> 3745-56-50(A)
	<i>OAC</i> 3745-56-50 to 3745-56-59 does not apply to owners or operators of waste piles that are closed with wastes left in place. Such waste piles are subject to regulation as landfills under <i>OAC</i> 3745-57-02 to 3745-57-17.		40 <i>CFR</i> 264.250(b) <i>OAC</i> 3745-56-50(B)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Temporary storage or treatment of hazardous waste in waste piles – applicability	<p>Owner or operator of any waste pile that is inside or under a structure that provides protection from precipitation so that neither run-off nor leachate is generated is not subject to regulation under <i>OAC</i> 3745-56-51 or <i>OAC</i> 3745-54-90 to 3745-54-101, provided that:</p> <ul style="list-style-type: none"> <li>• Liquids or materials containing free liquids are not placed in the pile; and</li> <li>• Pile is protected from surface water run-on by the structure or in some other manner; and</li> <li>• Pile is designed and operated to control dispersal of the waste by wind, where necessary, by means other than wetting; and</li> <li>• Pile will not generate leachate through decomposition or other reactions.</li> </ul>		<p>40 <i>CFR</i> 264.250(c)  <i>OAC</i> 3745-56-50(C)</p>
Temporary storage or treatment of hazardous waste in waste piles – design and operating requirements	<p>A waste pile (except for an existing portion of a waste pile) must have:</p> <p>(1) A liner that is designed, constructed, and installed to prevent any migration of wastes out of the pile into the adjacent subsurface soil or ground water or surface water at any time during the active life (including the closure period) of the waste pile. The liner may be constructed of materials that may allow waste to migrate into the liner itself (but not into the adjacent subsurface soil or ground water or surface water) during the active life of the facility. The liner must be:</p>	<p>Storage of RCRA hazardous waste in a waste pile—<b>applicable</b></p>	<p>40 <i>CFR</i> 264.251(a)  <i>OAC</i> 3745-56-51(A)</p> <p>40 <i>CFR</i> 264.251(a)(1)  <i>OAC</i> 3745-56-51(A)(1)</p>



**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Temporary storage or treatment of hazardous waste in waste piles – design and operating requirements (continued)	<ul style="list-style-type: none"> <li>Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or leachate to which they are exposed, climate conditions, the stress of installation, and the stress of daily operation; and</li> </ul>		40 <i>CFR</i> 264.251(a)(1)(i) <i>OAC</i> 3745-56-51(A)(1)(a)
	<ul style="list-style-type: none"> <li>Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of liner due to settlement, compression, or uplift; and</li> </ul>		40 <i>CFR</i> 264.251(a)(1)(ii) <i>OAC</i> 3745-56-51(A)(1)(b)
	<ul style="list-style-type: none"> <li>Installed to cover all surrounding earth likely to be in contact with the waste or leachate; and</li> </ul>		40 <i>CFR</i> 264.251(a)(1)(iii) <i>OAC</i> 3745-56-51(A)(1)(c)
	(2) A leachate collection and removal system immediately above the liner that is designed, constructed, maintained, and operated to collect and remove leachate from the pile. Design and operating conditions will be specified to ensure that the leachate depth over the liner does not exceed 30 cm (1 ft). The leachate collection and removal system must be:		40 <i>CFR</i> 264.251(a)(2) <i>OAC</i> 3745-56-51(A)(2)
	<ul style="list-style-type: none"> <li>Constructed of materials that are: (i) chemically resistant to waste managed in the pile and the leachate expected to be generated; and (ii) of sufficient strength and thickness to prevent collapse under the pressures exerted by overlaying wastes, waste cover materials, and by any equipment used at the pile; and</li> </ul>		40 <i>CFR</i> 264.251(a)(2)(i) <i>OAC</i> 3745-56-51(A)(2)(a)
	<ul style="list-style-type: none"> <li>Designed and operated to function without clogging through the scheduled closure of the waste pile.</li> </ul>		40 <i>CFR</i> 264.251(a)(2)(ii) <i>OAC</i> 3745-56-51(A)(2)(b)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

Media/Location/Action <sup>a</sup>	Requirements <sup>b</sup>	Prerequisite	Citation
Temporary storage or treatment of hazardous waste in waste piles – design and operating requirements (continued)	The owner or operator will be exempted from the requirements of <i>OAC 3745-56-51(A)</i> if the Director finds, based on a demonstration by the owner or operator, that alternate design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents into the ground water or surface water at any future time. In deciding whether to grant an exemption, the Director will consider the factors listed in <i>OAC 3745-56-51(B)(1)</i> through (4).		40 <i>CFR</i> 264.251(b) <i>OAC 3745-56-51(B)</i>
	The owner or operator of each new waste pile unit, each lateral expansion of a waste pile unit, and each replacement of an existing waste pile unit must install two or more liners and a leachate collection and removal system above and between such liners.		40 <i>CFR</i> 264.251(c) <i>OAC 3745-56-51(C)</i>
	The liner system must include:		40 <i>CFR</i> 264.251(c)(1)(i)(A) <i>OAC 3745-56-51(C)(1)(a)(i)</i>
	<ul style="list-style-type: none"> <li>• A top liner designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into such liner during the active life and postclosure care period; and</li> <li>• A composite bottom liner consisting of at least two components. The upper component must be designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into this component during the active life and postclosure care period. The lower component must be designed and constructed of materials to minimize migration of hazardous constituents if a breach in the upper component were to occur. Lower component must be constructed of at least 3 ft (91.0 cm) of compacted soil material with a hydraulic conductivity of no more than <math>1 \times 10^{-7}</math> cm/s.</li> </ul>		40 <i>CFR</i> 264.251(c)(1)(i)(B) <i>OAC 3745-56-51(C)(1)(a)(ii)</i>

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

Media/Location/Action <sup>a</sup>	Requirements <sup>b</sup>	Prerequisite	Citation
Temporary storage or treatment of hazardous waste in waste piles – design and operating requirements (continued)	The liners must comply with paragraphs (A)(1)(a), (A)(1)(b), and (A)(1)(c) of <i>OAC 3745-56-51</i> .		40 <i>CFR</i> 264.251(c)(1)(ii) <i>OAC 3745-56-51(C)(1)(b)</i>
	The leachate collection and removal system immediately above the top liner must be designed, constructed, operated, and maintained to collect and remove leachate from the waste pile during the active life and postclosure care period. Design and operating conditions will be specified to ensure that the leachate depth over the liner does not exceed 30 cm (1 ft). The leachate collection and removal system must comply with <i>OAC 3745-56-51(C)(3)(c)</i> and (C)(3)(d).		40 <i>CFR</i> 264.251(c)(2) <i>OAC 3745-56-51(C)(2)</i>
	The leachate collection and removal system between the liners, and immediately above the bottom composite liner in the case of multiple leachate collection and removal systems, is also a leak detection system. This leak detection system must be capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time through all areas of the top liner likely to be exposed to waste or leachate during the active life and postclosure care period. The requirements for a leak detection system in this paragraph are satisfied by installation of a system that is, at a minimum:		40 <i>CFR</i> 264.251(c)(3) <i>OAC 3745-56-51(C)(3)</i>
	<ul style="list-style-type: none"> <li>Constructed with a bottom slope of 1% or more;</li> <li>Constructed of granular drainage materials with a hydraulic conductivity of <math>1 \times 10^{-2}</math> cm/s or more and a thickness of 12 in. (30.5 cm) or more; or constructed of synthetic or geonet drainage materials with a transmissivity of <math>3 \times 10^{-5}</math> m<sup>2</sup>/s or more;</li> </ul>		40 <i>CFR</i> 264.251(c)(3)(i) <i>OAC 3745-56-51(C)(3)(a)</i> 40 <i>CFR</i> 264.251(c)(3)(ii) <i>OAC 3745-56-51(C)(3)(b)</i>

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Temporary storage or treatment of hazardous waste in waste piles – design and operating requirements (continued)	<ul style="list-style-type: none"> <li>Constructed of materials that are chemically resistant to the waste managed in the waste pile and the leachate expected to be generated, and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and equipment used at the waste pile;</li> </ul>		40 <i>CFR</i> 264.251(c)(3)(iii) <i>OAC</i> 3745-56-51(C)(3)(c)
	<ul style="list-style-type: none"> <li>Designed and operated to minimize clogging during the active life and postclosure period; and</li> </ul>		40 <i>CFR</i> 264.251(c)(3)(iv) <i>OAC</i> 3745-56-51(C)(3)(d)
	<ul style="list-style-type: none"> <li>Constructed with sumps and liquid removal methods of sufficient size to collect and remove liquids from sump and prevent liquids from backing up into drainage layer. Each unit must have its own sump(s). Design of each sump and removal system must provide a method for measuring and recording volume of liquids present in sump and of liquids removed.</li> </ul>		40 <i>CFR</i> 264.251(c)(3)(v) <i>OAC</i> 3745-56-51(C)(3)(e)
	The owner or operator must collect and remove pumpable liquids in the leak detection system sumps to minimize the head on the bottom liner.		40 <i>CFR</i> 264.251(c)(4) <i>OAC</i> 3745-56-51(C)(4)
	The owner or operator of a leak detection system that is not located completely above the seasonal high water table must demonstrate that the operation of the leak detection system will not be adversely affected by the presence of ground water.		40 <i>CFR</i> 264.251(c)(5) <i>OAC</i> 3745-56-51(C)(5)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Temporary storage or treatment of hazardous waste in waste piles – design and operating requirements (continued)	The Director may approve alternative design or operating practices if the owner or operator demonstrates that such design and operating practices, together with location characteristics: (1) will prevent the migration of any hazardous constituent into the ground water or surface water at least as effectively as the liners and leachate collection and removal systems specified in this rule; and (2) will allow detection of leaks of hazardous constituents through the top liner at least as effectively.		40 <i>CFR</i> 264.251(d) <i>OAC</i> 3745-56-51(D)
	The owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portion of the pile during peak discharge from at least a 25-year storm.		40 <i>CFR</i> 264.251(g) <i>OAC</i> 3745-56-51(G)
	The owner or operator must design, construct, operate, and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.		40 <i>CFR</i> 264.251(h) <i>OAC</i> 3745-56-51(H)
	Collection and holding facilities (e.g., tanks or basins) associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.		40 <i>CFR</i> 264.251(i) <i>OAC</i> 3745-56-51(I)
	If the pile contains any particulate matter which may be subject to wind dispersal, the owner or operator must cover or otherwise manage the pile to control wind dispersal.		40 <i>CFR</i> 264.251(j) <i>OAC</i> 3745-56-51(J)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Temporary storage or treatment of hazardous waste in waste piles – action leakage rate	<p>The Director will approve an action leakage rate for waste piles subject to <i>OAC 3745-56-51</i>(C) or (D). The action leakage rate is the maximum design flow rate that the leak detection system can remove without the fluid head on the bottom liner exceeding 1 ft. The action leakage rate must include an adequate safety margin to allow for uncertainties in the design (e.g., slope, hydraulic conductivity, thickness of drainage material), construction, operation, and location of the leak detection system, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the leak detection system, and proposed response actions (e.g., the action leakage rate must consider decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.).</p> <p>To determine if the action leakage rate has been exceeded, the owner or operator must convert the weekly flow rate from the monitoring data obtained under paragraph (C) of <i>OAC 3745-56-54</i> to an average daily flow rate (gal/acre/day) for each sump. Unless the Director approves a different calculation, the average daily flow rate for each sump must be calculated weekly during the active life and closure period.</p>	Storage of RCRA hazardous waste in a waste pile— <b>applicable</b>	<p>40 <i>CFR</i> 264.252(a) <i>OAC 3745-56-52</i>(A)</p> <p>40 <i>CFR</i> 264.252(b) <i>OAC 3745-56-52</i>(B)</p>
Temporary storage or treatment of hazardous waste in waste piles – response actions	The owner or operator of waste pile units subject to paragraph (C) or (D) of <i>OAC 3745-56-51</i> must have an approved response action plan before receipt of waste. The response action plan must set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan must describe the actions specified in <i>OAC 3745-56-53</i> (B).	Storage of RCRA hazardous waste in a waste pile— <b>applicable</b>	40 <i>CFR</i> 264.253(a) <i>OAC 3745-56-53</i> (A)

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**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

Media/Location/Action <sup>a</sup>	Requirements <sup>b</sup>	Prerequisite	Citation
Temporary storage or treatment of hazardous waste in waste piles – response actions (continued)	<ul style="list-style-type: none"> <li>Assess the source of liquids and amounts of liquids by source;</li> <li>Conduct fingerprint, hazardous constituent, or other analyses of liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and</li> <li>Assess the seriousness of any leaks in terms of potential for escaping into the environment; or</li> <li>Document why such assessments are not needed.</li> </ul>		40 <i>CFR</i> 264.253(c)(2) <i>OAC</i> 3745-56-53(C)(2)
Temporary storage or treatment of hazardous waste in waste piles – monitoring and inspections	<p>During construction or installation, liners and cover systems (e.g., membranes, sheets, or coatings) must be inspected for uniformity, damage, and imperfections (e.g., holes, cracks, thin spots, or foreign materials). Immediately after construction or installation:</p> <ul style="list-style-type: none"> <li>Synthetic liners and covers must be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters; and</li> <li>Soil-based and admixed liners and covers must be inspected for imperfections including lenses, cracks, channels, root holes, or other structural non-uniformities that may cause an increase in the permeability of the liner or cover.</li> </ul> <p>While a waste pile is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:</p> <ul style="list-style-type: none"> <li>Deterioration, malfunctions, or improper operation of run-on and run-off control systems; and</li> <li>Proper functioning of wind dispersal control systems, where present; and</li> </ul>	Storage of RCRA hazardous waste in a waste pile— <b>applicable</b>	40 <i>CFR</i> 264.254(a) <i>OAC</i> 3745-56-54(A)  40 <i>CFR</i> 264.254(a)(1) <i>OAC</i> 3745-56-54(A)(1)  40 <i>CFR</i> 264.254(a)(2) <i>OAC</i> 3745-56-54(A)(2)  40 <i>CFR</i> 264.254(b) <i>OAC</i> 3745-56-54(B)  40 <i>CFR</i> 264.254(b)(1) <i>OAC</i> 3745-56-54(B)(1)  40 <i>CFR</i> 264.254(b)(2) <i>OAC</i> 3745-56-54(B)(2)



**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Temporary storage or treatment of hazardous waste in waste piles – monitoring and inspections (continued)	<ul style="list-style-type: none"> <li>The presence of leachate in and proper functioning of leachate collection and removal systems, where present.</li> </ul>		40 <i>CFR</i> 264.254(b)(3) <i>OAC</i> 3745-56-54(B)(3)
	An owner or operator required to have a leak detection system under <i>OAC</i> 3745-56-51(C) must record the amount of liquids removed from each leak detection system sump at least once each week during the active life and closure period.		40 <i>CFR</i> 264.254(c) <i>OAC</i> 3745-56-54(C)
Temporary storage or treatment of hazardous waste in waste piles – special requirements for ignitable or reactive waste	Ignitable or reactive waste shall not be placed in a waste pile unless the waste and the waste pile satisfy all applicable requirements of <i>OAC</i> 3745-270, and:	Storage of RCRA hazardous waste in a waste pile— <b>applicable</b>	40 <i>CFR</i> 264.256 <i>OAC</i> 3745-56-56
	<ul style="list-style-type: none"> <li>Addition of the waste to an existing pile results in waste or mixture no longer meeting the definition of ignitable or reactive waste under <i>OAC</i> 3745-51-21 or 3745-51-23 and complies with <i>OAC</i> 3745-54-17(B); or</li> </ul>		40 <i>CFR</i> 264.256(a) <i>OAC</i> 3745-56-56(A)
	<ul style="list-style-type: none"> <li>The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react.</li> </ul>		40 <i>CFR</i> 264.256(b) <i>OAC</i> 3745-56-56(B)
Temporary storage or treatment of hazardous waste in waste piles – special requirements for incompatible waste	Incompatible wastes, or incompatible wastes and materials (see the appendix to <i>OAC</i> 3745-55-99 for examples), shall not be placed in the same pile, unless <i>OAC</i> 3745-54-17(B) is complied with.	Storage of RCRA hazardous waste in a waste pile— <b>applicable</b>	40 <i>CFR</i> 264.257(a) <i>OAC</i> 3745-56-57(A)
	A pile of hazardous waste that is incompatible with any waste or other material stored nearby in other containers, piles, open tanks, or surface impoundments shall be separated from the other materials, or protected from them by means of a dike, berm, wall or other device.		40 <i>CFR</i> 264.257(b) <i>OAC</i> 3745-56-57(B)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Temporary storage or treatment of hazardous waste in waste piles – special requirements for incompatible waste (continued)	Hazardous waste shall not be piled on the same base where incompatible wastes or materials were previously piled unless the base has been decontaminated sufficiently to ensure compliance with <i>OAC 3745-54-17(B)</i> .		40 <i>CFR</i> 264.257(c) <i>OAC 3745-56-57(C)</i>
Temporary storage or treatment of hazardous waste in waste piles – closure and postclosure care	At closure, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless <i>OAC 3745-51-03(D)</i> applies.	Storage of RCRA hazardous waste in a waste pile— <b>applicable</b>	40 <i>CFR</i> 264.258(a) <i>OAC 3745-56-58(A)</i>
	If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in paragraph (A) of this rule, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he must close the facility and perform postclosure care in accordance <i>OAC 3745-57-10</i> .		40 <i>CFR</i> 264.258(b) <i>OAC 3745-56-58(B)</i>
	The owner or operator of a waste pile that does not comply with the liner requirements of <i>OAC 3745-56-51(A)(1)</i> and is not exempt from them in accordance with <i>OAC 3745-56-50(C)</i> or <i>OAC 3745-56-51(B)</i> must:		40 <i>CFR</i> 264.258(c)(1) <i>OAC 3745-56-58(C)(1)</i>
	Include in the closure plan for the pile in accordance with <i>OAC 3745-55-12</i> both a plan for complying with paragraph (A) of this rule and a contingent plan for complying with paragraph (B) of this rule in case not all contaminated subsoils can be practicably removed at closure; and		40 <i>CFR</i> 264.258(c)(1)(i) <i>OAC 3745-56-58(C)(1)(a)</i>
	Prepare a contingent postclosure plan in accordance with <i>OAC 3745-55-18</i> for complying with paragraph (B) of this rule in case not all contaminated subsoils can be practicably removed at closure.		40 <i>CFR</i> 264.258(c)(1)(ii) <i>OAC 3745-56-58(C)(1)(b)</i>

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Temporary storage or treatment of hazardous waste in waste piles – closure and postclosure care (continued)	Cost estimates calculated in accordance with <i>OAC</i> 3745-55-42 and 3745-55-44 for closure and postclosure care of a pile subject to this paragraph must include the cost of complying with the contingent closure plan and the contingent postclosure plan but are not required to include the cost of expected closure under paragraph (A) of this rule.		40 <i>CFR</i> 264.258(c)(2) <i>OAC</i> 3745-56-58(C)(2)
<b><i>Hazardous waste treatment/disposal</i></b>			
Disposal of RCRA-prohibited hazardous waste in a land-based unit	<p>May be land disposed only if it meets the applicable requirements in the table “Treatment Standards for Hazardous Waste” at 40 <i>CFR</i> 268.40 (<i>OAC</i> 3745-270-40) before land disposal. The table lists either “total waste” standards, “waste-extract” standards, or “technology-specific” standards [as detailed further in 40 <i>CFR</i> 268.42 (<i>OAC</i> 3745-270-42)].</p> <p>For characteristic wastes (D001 – D043) that are subject to the treatment standards, all underlying hazardous constituents must meet the UTSs specified in 40 <i>CFR</i> 268.48 (<i>OAC</i> 3745-270-48).</p> <p>May be land disposed if the wastes no longer exhibit a characteristic at the point of land disposal, unless the wastes are subject to a specified method of treatment other than DEACT in 40 <i>CFR</i> 628.40 (<i>OAC</i> 3745-270-48), or are D003 reactive cyanide.</p>	<p>Land disposal, as defined in 40 <i>CFR</i> 268.2, of RCRA prohibited waste [as listed in 40 <i>CFR</i> 268.20 to .39 (<i>OAC</i> 3745-270-20 to -39)]—<b>applicable</b></p> <p>Land disposal of restricted RCRA characteristic wastes (D001-D043) that are not managed in a wastewater treatment unit that is regulated under the CWA or is CWA equivalent, or that are injected into a Class I nonhazardous injection well—<b>applicable</b></p> <p>Land disposal of RCRA-restricted characteristic wastes—<b>applicable</b></p>	<p>40 <i>CFR</i> 268.40(a) <i>OAC</i> 3745-270-40(A)</p> <p>40 <i>CFR</i> 268.30 to 268.40 <i>OAC</i> 3745-270-30 to -40</p> <p>40 <i>CFR</i> 268.42 <i>OAC</i> 3745-270-42</p> <p>40 <i>CFR</i> 268.40(e) <i>OAC</i> 3745-270-40(E)</p> <p>40 <i>CFR</i> 268.48 <i>OAC</i> 3745-270-48</p> <p>40 <i>CFR</i> 268.1(c)(4)(iv) <i>OAC</i> 3745-270-01 (C)(4)</p>

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

Media/Location/Action <sup>a</sup>	Requirements <sup>b</sup>	Prerequisite	Citation
Disposal of RCRA-prohibited hazardous waste in a land-based unit (continued)	May be land disposed if treated prior to disposal as provided under the “Alternative Treatment Standards for Hazardous Debris” in 40 <i>CFR</i> 268.45(a)(1)-(5) [ <i>OAC</i> 3745-270-45(A) (1)-(5)] unless it is determined under 40 <i>CFR</i> 261.3(f)(2) [ <i>OAC</i> 3745-51-03(F)(2)] that the debris is no longer contaminated with hazardous waste <u>or</u> the debris is treated to the waste specific treatment standard provided in 40 <i>CFR</i> 268.40 ( <i>OAC</i> 3745-270-40) for the waste contaminating the debris.	Land disposal, as defined in 40 <i>CFR</i> 268.2 ( <i>OAC</i> 3745-270-02), of RCRA-restricted hazardous debris— <b>applicable</b>	40 <i>CFR</i> 268.45(a) <i>OAC</i> 3745-270-45(A)
<i>Debris</i>	The hazardous debris must be treated for each “contaminant subject to treatment,” which must be determined in accordance with 40 <i>CFR</i> 268.45(b) [ <i>OAC</i> 3745-270-45(B)].		40 <i>CFR</i> 268.45(b) <i>OAC</i> 3745-270-45(B)
<i>Soils</i>	May be land disposed if treated prior to disposal according to the alternative treatment standards of 40 <i>CFR</i> 268.49(c) [ <i>OAC</i> 3745-270-49(C)] or according to the UTSs specified in 40 <i>CFR</i> 268.48 ( <i>OAC</i> 3745-270-48) applicable to the listed hazardous waste and/or applicable characteristic of hazardous waste if the soil is characteristic.	Land disposal, as defined in 40 <i>CFR</i> 268.2 ( <i>OAC</i> 3745-270-02), of RCRA-restricted hazardous waste and soils — <b>applicable</b>	40 <i>CFR</i> 268.49(b) and (c) <i>OAC</i> 3745-270-49 (B) and (C)
Variance from a treatment standard for RCRA restricted hazardous wastes	<p>A variance from a treatment standard may be used if it is:</p> <ul style="list-style-type: none"> <li>Not physically possible to treat the waste to the level specified in the treatment standard, or by the method specified as the treatment standard, or</li> <li>Inappropriate to require the waste to be treated to the level specified in the treatment standard or by the method specified as the treatment standard even though such treatment is technically possible.</li> </ul> <p><i>NOTE:</i> Variance approval will be granted through the DFF&amp;O document approval process and included in the appropriate DFF&amp;O document.</p>	Generation of a RCRA hazardous waste requiring treatment prior to land disposal— <b>applicable</b>	40 <i>CFR</i> 268.44 <i>OAC</i> 3745-270-44

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Disposal of treated hazardous debris	Debris treated by one of the specified extraction or destruction technologies on Table 1 of this section and which no longer exhibits a characteristic is not a hazardous waste and need not be managed in RCRA Subtitle C facility. Hazardous debris contaminated with listed waste that is treated by an immobilization technology must be managed in a RCRA Subtitle C facility.	Treated debris contaminated with RCRA-listed or characteristic waste— <b>applicable</b>	40 <i>CFR</i> 268.45(c) <i>OAC</i> 3745-270-45(C)
Disposal of hazardous debris treatment residues	Except as provided in 40 <i>CFR</i> 268.45(d)(2) and (d)(4) [ <i>OAC</i> 3745-270-45(D)(2) and (D)(4)], treatment residues must be separated from the treated debris using simple physical or mechanical means, and such residues are subject to the waste-specific treatment standards for the waste contaminating the debris. Layers of debris removed by spalling are hazardous debris that remain subject to the treatment standards.	Residues from the treatment of hazardous debris— <b>applicable</b>	40 <i>CFR</i> 268.45(d)(1)–(5) <i>OAC</i> 3745-270-45(D) (1)–(5)
Prohibition of dilution to meet LDRs	Except as provided under 40 <i>CFR</i> 268.3(b) [ <i>OAC</i> 3745-270-03(B)], must not in any way dilute a restricted waste or the residual from treatment of a restricted waste as a substitute for adequate treatment to achieve compliance with land disposal restriction levels.	Land disposal, as defined in 40 <i>CFR</i> 268.2 ( <i>OAC</i> 3745-270-02), of RCRA-restricted hazardous waste— <b>applicable</b>	40 <i>CFR</i> 268.3(a) <i>OAC</i> 3745-270-03(A)
	It is a form of impermissible dilution, and therefore prohibited, to add iron filings or other metallic forms of iron to lead-containing hazardous wastes in order to achieve any land disposal restriction treatment standard for lead.		<i>OAC</i> 3745-270-03(D)
Disposal requirements for particular RCRA waste forms and types	Must not be placed in a landfill unless the waste and the landfill meet applicable provisions of 40 <i>CFR</i> 268 and: <ul style="list-style-type: none"> <li>The resulting waste, mixture, or dissolution of material no longer is reactive or ignitable.</li> </ul>	Disposal of ignitable or reactive RCRA waste— <b>applicable</b>	40 <i>CFR</i> 264.312(a) <i>OAC</i> 3745-57-12(A)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

Media/Location/Action <sup>a</sup>	Requirements <sup>b</sup>	Prerequisite	Citation
Disposal requirements for particular RCRA waste forms and types (continued)	<ul style="list-style-type: none"> <li>40 <i>CFR</i> 264.17(b) [<i>OAC</i> 3745-54-17(B)] is complied with.</li> </ul> <p>May be landfilled without meeting 40 <i>CFR</i> 264.312(a) [<i>OAC</i> 3745-57-12(A)], provided wastes are disposed of in such a way that they are protected from any materials or conditions which may cause them to ignite;</p> <p>Must be disposed of in nonleaking containers which are carefully handled and placed to avoid heat, sparks, rupture, or any other condition that might cause ignition of the wastes;</p> <p>Must be covered daily with soil or other noncombustible material to minimize the potential of ignition;</p> <p>Must not be disposed of in cells that contain or will contain other wastes which may generate heat sufficient to cause ignition of the waste and</p> <p>Must not be placed into a cell unless 40 <i>CFR</i> 264.17(b) [<i>OAC</i> 3745-54-17(B)] is complied with.</p>	<p>Disposal of ignitable or reactive RCRA waste [except for prohibited wastes which remain subject to treatment standards in 40 <i>CFR</i> 268.40 <i>et seq.</i>]<b>—applicable</b></p> <p>Disposal of incompatible wastes in a RCRA landfill<b>—applicable</b></p>	<p>40 <i>CFR</i> 264.312(b) <i>OAC</i> 3745-57-12(B)</p> <p>40 <i>CFR</i> 264.313 <i>OAC</i> 3745-57-13</p>
Disposal of bulk or containerized hazardous liquids	<p>The placement of bulk or noncontainerized liquid hazardous waste or hazardous waste containing free liquids (whether or not sorbents have been added) in any landfill is prohibited.</p> <p>Must use the Paint Filter Liquids Test to demonstrate the absence or presence of free liquids in either a containerized or a bulk waste.</p> <p>Containers holding free liquids must not be placed in a landfill, unless:</p>	<p>Placement of bulk or containerized hazardous waste liquids in a landfill<b>—applicable</b></p>	<p>40 <i>CFR</i> 264.314(a) <i>OAC</i> 3745-57-14(A)</p> <p>40 <i>CFR</i> 264.314(b) <i>OAC</i> 3745-57-14(B)</p> <p>40 <i>CFR</i> 264.314(c) <i>OAC</i> 3745-57-14(C)</p>

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Disposal of bulk or containerized hazardous liquids (continued)	<ul style="list-style-type: none"> <li>All free-standing liquid has been removed by decanting, or other methods; or has been mixed with sorbent or solidified so that free-standing liquid is no longer observed; or has been otherwise eliminated; or</li> </ul>		40 <i>CFR</i> 264.314(c)(1) <i>OAC</i> 3745-57-14(C)(1)
	<ul style="list-style-type: none"> <li>Container is very small, such as an ampule; or</li> </ul>		40 <i>CFR</i> 264.314(c)(2) <i>OAC</i> 3745-57-14(C)(2)
	<ul style="list-style-type: none"> <li>Container is designed to hold free liquids for use other than storage, such as a battery or capacitor or</li> </ul>		40 <i>CFR</i> 264.314(c)(3) <i>OAC</i> 3745-57-14(C)(3)
	<ul style="list-style-type: none"> <li>Container is a lab pack as defined in 40 <i>CFR</i> 264.316 [<i>OAC</i> 3745-57-16] and is disposed of in accordance with 40 <i>CFR</i> 264.316 [<i>OAC</i> 3745-57-16].</li> </ul>		40 <i>CFR</i> 264.314(c)(4) <i>OAC</i> 3745-57-14(C)(4)
	Sorbents used to treat free liquids to be disposed of in landfills must be nonbiodegradable as described in 40 <i>CFR</i> 264.314(d)(1) [ <i>OAC</i> 3745-57-14(D)(1)].		40 <i>CFR</i> 264.314(d) <i>OAC</i> 3745-57-14(D)
	The placement of any liquid which is not a hazardous waste in a landfill is prohibited unless it is demonstrated that the only reasonably available alternative is placement in a landfill or unlined surface impoundment which contains or may contain hazardous waste and such placement will not present a risk of contamination of any underground source of drinking water.		40 <i>CFR</i> 264.314(e) <i>OAC</i> 3745-57-14(E)
	Unless they are very small, containers must be either at least 90% full when placed in the landfill, or crushed, shredded, or similarly reduced in volume to the maximum practical extent before burial in the landfill.		40 <i>CFR</i> 264.315 <i>OAC</i> 3745-57-15
	Small containers of hazardous waste in overpacked drums (lab packs) may be placed in a landfill if the requirements of this section are met.		40 <i>CFR</i> 264.316 <i>OAC</i> 3745-57-16

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Disposal of hazardous wastes F020, F021, F022, F023, F026, and F027 listed wastes	Disposal of F020, F021, F022, F023, F026, and F027 wastes in a hazardous waste landfill is not permitted unless comply with the substantive requirements for waste management of 40 <i>CFR</i> 264.317 [ <i>OAC</i> 3745-57-17].	Disposal of hazardous wastes F020, F021, F022, F023, F026, and F027— <b>applicable</b>	40 <i>CFR</i> 264.317 <i>OAC</i> 3745-57-17
Treatment and disposal of ignitable, reactive, or incompatible RCRA wastes	<p>Must take precautions to prevent accidental ignition or reaction of waste, and waste must be separated and protected from sources of ignition or reaction.</p> <p>Must take precautions to prevent reactions that:</p> <ul style="list-style-type: none"> <li>• Generate extreme heat, pressure, fire or explosion, or violent reactions</li> <li>• Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment</li> <li>• Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions</li> <li>• Damage the structural integrity of the device or facility</li> <li>• Through other like means threaten human health or the environment.</li> </ul>	<p>Operation of a RCRA facility that treats, stores, or disposes of ignitable, reactive, or incompatible wastes—<b>applicable</b></p>	<p>40 <i>CFR</i> 264.17(a) <i>OAC</i> 3745-54-17(A)</p> <p>40 <i>CFR</i> 264.17(b) <i>OAC</i> 3745-54-17(B)</p>
<b><i>Closure of treatment or storage units</i></b>			
Closure performance standard for RCRA hazardous waste management units	<p>Must close the facility in a manner that:</p> <ul style="list-style-type: none"> <li>• Minimizes the need for further maintenance and</li> <li>• Controls, minimizes, or eliminates, to the extent necessary to protect human health and environment, postclosure escape of hazardous waste, hazardous constituents, contaminated runoff, or hazardous waste decomposition products to ground or surface waters or to the atmosphere</li> </ul>	Closure of a RCRA hazardous waste management unit— <b>applicable</b>	<p>40 <i>CFR</i> 264.111(a) <i>OAC</i> 3745-55-11(A)</p> <p>40 <i>CFR</i> 264.111(b) <i>OAC</i> 3745-55-11(B)</p>



**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

Media/Location/Action <sup>a</sup>	Requirements <sup>b</sup>	Prerequisite	Citation
Closure performance standard for RCRA hazardous waste management units (continued)	<ul style="list-style-type: none"> <li>Complies with the substantive closure requirements of 40 <i>CFR</i> 264 [OAC 3745-54 to 3745-57 and 3745-205] for particular type of facility including, but not limited to, requirements of Sections 264.178 (container storage area) [OAC 3745-55-78], 264.197 (tanks) [OAC 3745-55-97], and 264.554 (remediation waste piles) [OAC 3745-56-58].</li> </ul>		40 <i>CFR</i> 264.111(c) OAC 3745-55-11(C)
	Must have a closure plan identifying the steps necessary to perform partial and/or final closure of the facility at any point during its active life and must amend the plan as necessary.		40 <i>CFR</i> 264.112 OAC 3745-55-12
	During the partial and final closure periods, all contaminated equipment, structures, and soils must be properly disposed or decontaminated.	Closure of a RCRA hazardous waste management unit— <b>applicable</b>	40 <i>CFR</i> 264.114 OAC 3745-55-14
Postclosure care of RCRA hazardous waste management unit	Postclosure care in accordance with the substantive requirements of OAC 3745-55-17 (A)(1) must begin after closure and continue for at least 30 years after that date. The Director may shorten or extend the postclosure period as indicated to protect human health and the environment.	Closure of a RCRA hazardous waste disposal unit— <b>applicable</b>	40 <i>CFR</i> 264.117(a) (1) and (2) OAC 3745-55-17(A) (1) and (2)
Closure of a RCRA container storage unit	Must remove all hazardous waste and residues from containment system. Remaining containers, liners, bases, and soil containing or contaminated with hazardous waste or residues must be decontaminated or removed.	Closure of a RCRA hazardous waste container storage area— <b>applicable</b>	40 <i>CFR</i> 264.178 OAC 3745-55-78
Closure of RCRA hazardous waste tanks	At closure, remove all hazardous waste and hazardous waste residues from tanks, discharge control equipment, and discharge confinement structures.	Management of RCRA hazardous waste in tanks— <b>applicable</b>	40 <i>CFR</i> 264.197(a) OAC 3745-55-97(A)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Closure of RCRA hazardous waste tanks (continued)	If all contaminated contents cannot be removed, must consider the tank system a landfill and close the facility and perform postclosure care in accordance with the landfill closure requirements of 40 <i>CFR</i> 264.310 [ <i>OAC</i> 3745-57-10].		40 <i>CFR</i> 264.197(b) <i>OAC</i> 3745-55-97(B)
	If a tank system does not have secondary containment, such a system is considered a landfill and closure and postclosure plans must reflect this.		40 <i>CFR</i> 264.197(c) <i>OAC</i> 3745-55-97(C)
Closure of a RCRA remediation waste staging pile	Must be closed by removing or decontaminating all remediation waste, contaminated containment system components, and structures and equipment contaminated with waste and leachate.	Storage of remediation waste in staging pile located in previously contaminated area— <b>applicable</b>	40 <i>CFR</i> 264.554(j)(1) <i>OAC</i> 3745-57-74(J)(1)
	Must decontaminate contaminated subsoils in a manner that will protect human health and the environment.		40 <i>CFR</i> 264.554(j)(2) <i>OAC</i> 3745-57-74(J)(2)
	Must be closed according to substantive requirements in 40 <i>CFR</i> 264.258(a) and 264.111 or 265.258(a) and 265.111 [ <i>OAC</i> 3745-56-58(A) and 3745-55-11 or 3745-67-58 and 3745-66-11] by removing or decontaminating all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and managing them as hazardous waste.	Storage of remediation waste in staging pile located in an uncontaminated area— <b>applicable</b>	40 <i>CFR</i> 264.554(k) <i>OAC</i> 3745-57-74(K)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

Media/Location/Action <sup>a</sup>	Requirements <sup>b</sup>	Prerequisite	Citation
<i>Transportation<sup>c</sup></i>			
Transportation of hazardous waste on site	<p>The generator manifesting requirements of 40 <i>CFR</i> 262.20 to 262.32(b) [<i>OAC</i> 3745-52-20 to 3745-52-23 and 3745-52-32(B)] do not apply.</p> <p>Generator or transporter must comply with the requirements set forth in 40 <i>CFR</i> 263.30 and 263.31 [<i>OAC</i> 3745-53-30 and 3745-53-31] in the event of a discharge of hazardous waste on a private or public right-of-way.</p>	Transportation of hazardous wastes on a public or private right-of-way within or along the border of contiguous property under the control of the same person, even if such contiguous property is divided by a public or private right-of-way— <b>applicable</b>	40 <i>CFR</i> 262.20(f) <i>OAC</i> 3745-52-20(F)
Transportation of hazardous waste off site	Must comply with the generator requirements of 40 <i>CFR</i> 262.20 to 262.23 [ <i>OAC</i> 3745-52-20 to 3745-52-23] for manifesting, Section 262.30 [ <i>OAC</i> 3745-52-30] for packaging, Section 262.31 [ <i>OAC</i> 3745-52-31] for labeling, Sect. 262.32 [ <i>OAC</i> 3745-52-32] for marking, Section 262.33 [ <i>OAC</i> 3745-52-33] for placarding, Sections 262.40 and 262.41(a) [ <i>OAC</i> 3745-52-40 and 3745-52-41] for record keeping requirements, and Section 262.12 [ <i>OAC</i> 3745-52-12] to obtain EPA ID number.	Preparation of RCRA hazardous waste for off-site transport— <b>applicable</b>	40 <i>CFR</i> 262.10(h) <i>OAC</i> 3745-52-10(H) 40 <i>CFR</i> 262.20 to .23 <i>OAC</i> 3745-52-20 to -23 40 <i>CFR</i> 262.30 to .33 <i>OAC</i> 3745-52-30 to -33
Transportation of hazardous materials on site	Must meet the substantive requirements of 49 <i>CFR</i> Parts 171–174, 177, and 178 or the site- or facility-specific Transportation Safety Document (i.e., <i>Transportation Safety Document for the On-Site Transfer of Hazardous Material at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio</i> ).	Transport of hazardous materials on the PORTS facility— <b>TBC</b>	DOE Order 460.1C(4)(b)

<sup>a</sup>As noted in the DFF&O, Paragraph 9.a, the NCP at 40 *CFR* 300.400(e)(1) defines “on-site” as meaning “the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for the implementation of the response action.” Off-site transportation, by definition, is not an on-site response action and is subject to all substantive, procedural, and administrative requirements of all legally applicable laws, but not to any requirements that might normally be labeled relevant and appropriate under the ARARs process.

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Transportation of hazardous materials off site	Any person who, under contract with a department or agency of the Federal government, transports “in commerce,” or causes to be transported or shipped, a hazardous material, shall be subject to and must comply with all applicable provisions of the HMTA and HMR at 49 <i>CFR</i> 171 – 180 related to marking, labeling, placarding, etc.	Preparation for transport or shipment “in commerce” of a hazardous material— <b>applicable</b>	49 <i>CFR</i> 171.1(c)
<b>SOLID WASTE</b>			
<i>Design, construction, operation, and closure of a solid waste landfill</i>			
Siting of a solid waste landfill	<p>The limits of solid waste placement of the landfill cannot be:</p> <ul style="list-style-type: none"> <li>• Within 1,000 ft of or within a national park or recreation area or candidate area for potential inclusion in the national park system; or a state park or state park purchase area; or any property that lies within the boundaries of a national park or recreation area but that has not been acquired or is not administered by the secretary of the DOI (1,000-ft setback does not apply if obtain written authorization from the owner to locate within 1,000 ft)</li> <li>• In a sand or gravel pit, or</li> <li>• In a limestone or sandstone quarry</li> <li>• Above a federally-designated sole source aquifer, unless granted an exemption by Ohio EPA</li> <li>• Above an unconsolidated aquifer system capable of sustaining a yield of 100 gpm for a 24-hr period to a well located within 1,000 ft of where solid waste is placed, unless deemed acceptable by Ohio EPA.</li> </ul>	<p>Construction of a sanitary landfill (defined in <i>OAC</i> 3745-27-01 as including solid waste landfills)—<b>applicable</b></p>	<p><i>OAC</i> 3745-27-07(H) <i>OAC</i> 3745-27-07(H)(1)</p> <p><i>OAC</i> 3745-27-07(H)(2)(a) <i>OAC</i> 3745-27-07(H)(2)(b)</p> <p><i>OAC</i> 3745-27-07(H)(2)(c)</p> <p><i>OAC</i> 3745-27-07(H)(2)(d)</p>

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Siting of a solid waste landfill (continued)	The isolation distance between the uppermost aquifer system and the bottom of the recompacted soil liner of the landfill must be not less than 15 ft of in situ or added geologic material deemed acceptable by Ohio EPA.		OAC 3745-27-07(H)(2)(e)
	The limits of solid waste placement of the landfill and any leachate ponds or lagoons cannot be located within the surface and subsurface areas of either of the following:	Construction of a sanitary landfill (defined as including solid waste landfills)— <b>applicable</b>	OAC 3745-27-07(H)(3)(a)
	<ul style="list-style-type: none"> <li>Surrounding a public water supply well through which contaminants may move toward and may reach the well through underground geologic or man-made pathways within a period of 5 years</li> </ul>		OAC 3745-27-07(H)(3)(a)(i)
	<ul style="list-style-type: none"> <li>A wellhead protection area or a drinking water source protection area for a public water system using groundwater</li> </ul>		OAC 3745-27-07(H)(3)(a)(ii)
	Landfill cannot be located within an area of potential subsidence due to an underground mine or within the angle of draw of an underground mine unless the potential impact to the facility due to subsidence is minimized.		OAC 3745-27-07(H)(3)(b)
	The limits of solid waste placement of the landfill cannot be within 1,000 ft of a water supply well or a developed spring unless one or more of the conditions listed in OAC 3745-27-07(H)(3)(c)(i) – (iv) is met.		OAC 3745-27-07(H)(3)(c)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Siting of a solid waste landfill (continued)	Solid waste cannot be placed within 1,000 ft of the following natural areas:		<i>OAC 3745-27-07(H)(4)(a)</i>
	<ul style="list-style-type: none"> <li>National or state nature/wildlife refuge or preserve</li> <li>National or state wild, scenic or recreational river</li> <li>Special interest or research area, or</li> <li>Stream area designated by Ohio EPA as a coldwater or exceptional warm water habitat.</li> </ul>		
	Solid waste cannot be placed:		<i>OAC 3745-27-07(H)(4)</i> <i>OAC 3745-27-07(H)(4)(b)</i>
	<ul style="list-style-type: none"> <li>Within 300 ft of the landfill facility's property line, unless deemed acceptable by Ohio EPA</li> <li>Within 1,000 ft of a residence whose owner has not consented in writing to its location</li> <li>Within 200 ft of a stream, lake, or wetland</li> <li>In a regulatory floodplain (as defined in <i>OAC 3745-27-01</i>) unless demonstrated that unit(s) will not restrict flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste so as to pose a hazard to human health and the environment.</li> <li>Within 200 ft of a fault that has had displacement in Holocene time unless it is demonstrated that a distance of less than 200 ft will prevent damage to the structural integrity of the facility and will be protective of human health and the environment.</li> </ul>	Construction of a sanitary landfill (defined as including solid waste landfills)— <b>applicable</b>	<i>OAC 3745-27-07(H)(4)(c)</i> <i>OAC 3745-27-07(H)(4)(d)</i> <i>OAC 3745-27-20(C)(2)</i>  <i>OAC 3745-27-20(C)(3)</i>

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Siting of a solid waste landfill (continued)	<ul style="list-style-type: none"> <li>In a “seismic impact zone” (as defined in <i>OAC 3745-27-01</i>) unless demonstrated that all containment structures, including liners, leachate collection systems, sedimentation ponds, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site.</li> </ul>		<i>OAC 3745-27-20(C)(4)</i>
	<ul style="list-style-type: none"> <li>In an “unstable area” (as defined in <i>OAC 3745-27-01</i>) unless demonstrated that engineering measures have been incorporated into the design of the facility to ensure that the integrity of the structural components will not be disrupted.</li> </ul>		<i>OAC 3745-27-20(C)(5)</i>
Design of a solid waste disposal facility	Detail engineering plans, specifications, and information for all unit(s) of a sanitary landfill facility shall be submitted, shown by means of drawings and narrative descriptions where appropriate. The information to be included on the drawings shall be as listed in <i>OAC 3745-27-06(B)(2)</i> through (7).	Construction and operation of a sanitary landfill— <b>applicable</b>	<i>OAC 3745-27-06(B)</i> <i>OAC 3745-27-06(B)(2) – (7)</i>
	The following information shall be presented in narrative form in a report:		<i>OAC 3745-27-06(C)</i>
	<ul style="list-style-type: none"> <li>Summary of the facility environs and a demonstration that the sanitary landfill facility will meet the siting criteria; shall include a discussion of the facility’s compliance with the facility’s limits of waste placement, the location restriction demonstrations, and operational criteria</li> </ul>		<i>OAC 3745-27-06(C)(1)</i>
	<ul style="list-style-type: none"> <li>A hydrogeologic and geotechnical site investigation report(s), which shall at a minimum include the information listed in <i>OAC 3745-27-06(C)(3)(a)</i> through (g)</li> </ul>	Construction and operation of a sanitary landfill— <b>applicable</b>	<i>OAC 3745-27-06(C)(3)</i>

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Design of a solid waste disposal facility (continued)	<ul style="list-style-type: none"> <li>Analyses, as listed in <i>OAC 3745-27-06(C)(4)(a) – (e) and (g)</i>, establishing stability of the facility and the subsurface.</li> </ul>		<i>OAC 3745-27-06(C)(4)(a) – (e) and (g)</i>
	<ul style="list-style-type: none"> <li>Design calculations with references to equations used, showing site-specific input and assumptions that demonstrate compliance with the design requirements of <i>OAC 3745-27-08</i></li> </ul>		<i>OAC 3745-27-06(C)(5)(a), (c) and (e) – (g), and (j) – (m)</i>
	<ul style="list-style-type: none"> <li>For proposed new unit(s), the location restriction demonstrations in accordance with <i>OAC 3745-27-20</i></li> </ul>		<i>OAC 3745-27-06(C)(6)</i>
	<ul style="list-style-type: none"> <li>Demonstration of physical and chemical resistance, as required in <i>OAC 3745-27-08(D)(10) and (D)(13)</i>, and compaction equipment slope limitations.</li> </ul>		<i>OAC 3745-27-06(C)(7)(b) and (c)</i>
	<ul style="list-style-type: none"> <li>The QA/QC plan for the engineered components</li> </ul>		<i>OAC 3745-27-06(C)(9)(c)</i>
	<ul style="list-style-type: none"> <li>Wetland demonstration to authorize discharge of dredge or fill material into wetlands, if facility will be sited in wetlands; and proof of property ownership or lease agreement to use the property as a sanitary landfill facility</li> </ul>		<i>OAC 3745-27-06(C)(10)(c) and (d)</i>
Liner design criteria for a composite liner system	Composite liner system shall be designed to: <ul style="list-style-type: none"> <li>Serve as a barrier to prevent the discharge of any leachate to ground or surface waters.</li> </ul>	Construction of a sanitary waste landfill— <b>applicable</b>	<i>OAC 3745-27-08(C)(1)</i>
Leachate collection and management system	<ul style="list-style-type: none"> <li>Have at least a 2.0% slope in all areas, except along flow lines augmented by leachate collection pipes, after accounting for 100% of the primary consolidation settlement and the secondary consolidation settlement of the compressible materials beneath the landfill which includes, as applicable, in-situ soil, added geologic material, structural fill material, and re-compacted soil liner.</li> </ul>		<i>OAC 3745-27-08(C)(1)(b)</i>



**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Leachate collection and management system (continued)	<ul style="list-style-type: none"> <li>Have a maximum slope based on the compaction equipment limitations and the slope stability.</li> </ul>		OAC 3745-27-08(C)(1)(e)
	The leachate collection and management system shall be designed to do the following:	Construction of a sanitary waste landfill— <b>applicable</b>	OAC 3745-27-08(C)(3)
	<ul style="list-style-type: none"> <li>Any components located outside of the limits of solid waste placement shall be no less protective of the environment than the sanitary landfill by complying with this paragraph.</li> </ul>		OAC 3745-27-08(C)(3)(a)
	<ul style="list-style-type: none"> <li>The selection and specifications for the materials that will make up the leachate collection layer shall be protective of the flexible membrane liner or the design must include a liner cushion layer meeting the specifications for liner cushions at OAC 3745-27-08(D)(11).</li> </ul>		OAC 3745-27-08(C)(3)(b) OAC 3745-27-08(D)(11)
	<ul style="list-style-type: none"> <li>Limit the level of leachate in areas other than sumps to a maximum of 1 ft throughout the operation and post closure of the landfill.</li> </ul>		OAC 3745-27-08(C)(3)(c)
	<ul style="list-style-type: none"> <li>Have at least a 0.5% grade for the leachate collection pipes after accounting for 100% of the primary consolidation settlement and the secondary consolidation settlement of the compressible materials beneath the landfill which includes, as applicable, in-situ soil, added geologic material, structural fill material, and re-compacted soil liner.</li> </ul>		OAC 3745-27-08(C)(3)(d)
Composite cap system for closure	Composite cap system shall be designed to do the following:	Closure of a sanitary waste landfill— <b>applicable</b>	OAC 3745-27-08(C)(4) OAC 3745-27-08(C)(4)(a)
	<ul style="list-style-type: none"> <li>Minimize infiltration of surface water</li> </ul>		
	<ul style="list-style-type: none"> <li>Serve as a barrier to prevent leachate outbreaks</li> </ul>		OAC 3745-27-08(C)(4)(b)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Composite cap system for closure (continued)	<ul style="list-style-type: none"> <li>Have at least a 5.0% grade in all areas except where surface water control structures are located</li> <li>Have a maximum slope based on compaction and maintenance equipment limitations and on slope stability.</li> </ul>		<p><i>OAC 3745-27-08(C)(4)(c)</i></p> <p><i>OAC 3745-27-08(C)(4)(d)</i></p>
Design for explosive gas control system	The design of the explosive gas control system may utilize a passive venting system or an active extraction system to satisfy air pollution control requirements and shall be designed to maintain explosive gas concentrations below the explosive gas threshold limits in <i>OAC 3745-27-12(E)(5)(a)</i> .	Construction of a sanitary waste landfill— <b>applicable</b> if landfill design includes an explosive gas control system	<i>OAC 3745-27-08(C)(5)</i>
Design for geosynthetic materials	The design of all geosynthetic materials specified in the engineered components, including but not limited to, flexible membrane liners, geosynthetic clay liners, and geosynthetic drainage nets, shall not rely on any of the tensile qualities of these geosynthetic components.	Construction of a sanitary waste landfill— <b>applicable</b>	<i>OAC 3745-27-08(C)(6)</i>
Design for engineered components and waste mass	The design for the stability of all engineered components and the waste mass shall address any configuration throughout the applicable developmental and post closure periods. Potential failures associated with internal, interim and final slopes, as these slopes are defined in <i>OAC 3745-27-06</i> , shall be used to define the minimum construction specification and materials that, at a minimum, will meet the requirements listed in <i>OAC 3745-27-08(C)(7)(a)</i> through (f).	Construction of a sanitary waste landfill— <b>applicable</b>	<i>OAC 3745-27-08(C)(7)(a)</i> through (f)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Run-on/runoff control structures	<p>Surface water run-on and run-off control structures shall comply with the following:</p> <ul style="list-style-type: none"> <li>Accommodate peak flow from 25-year/24-hour storm event</li> <li>Minimize silting and scouring</li> <li>Use non-mechanical means for all permanent structures.</li> </ul>	Construction and operation of a sanitary landfill— <b>applicable</b>	<i>OAC 3745-27-08(D)(2)</i>
Sedimentation ponds	Sedimentation ponds must comply with the standards in <i>OAC 3745-27-08(D)(3)(a)</i> through (e).	Construction and operation of a sanitary landfill— <b>applicable</b>	<i>OAC 3745-27-08(D)(3)</i>
Groundwater control structures	Permanent ground water control structures shall adequately control ground water infiltration through the use of non-mechanical means such as impermeable barriers or permeable drainage structures. However, no permanent ground water control structures may be used to dewater an aquifer system, except if the recharge and discharge zone of the aquifer system are located entirely within the boundary of the sanitary landfill facility.	Construction and operation of a sanitary landfill— <b>applicable</b>	<i>OAC 3745-27-08(D)(4)</i>
Liner and leachate collection design for a composite liner system	The unconsolidated or consolidated stratigraphic units that make up the in-situ foundation shall meet the design standards listed in <i>OAC 3745-27-08(D)(5)(a)</i> through (f).	Construction and operation of a sanitary landfill— <b>applicable</b>	<i>OAC 3745-27-08(D)(5)</i>
	Rock fills or soil fills for a structural berm or subbase shall comply with the design standards listed in <i>OAC 3745-27-08(D)(6)(a)</i> through (f).		<i>OAC 3745-27-08(D)(6)</i>
	Added geologic material shall comply with the design standards listed in <i>OAC 3745-27-08(D)(7)(a)</i> through (h).		<i>OAC 3745-27-08(D)(7)</i>
	<i>Liners</i> Recompacted soil liner shall comply with the design standards listed in <i>OAC 3745-27-08(D)(8)(b)</i> through (j).		<i>OAC 3745-27-08(D)(8)</i>

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Liner and leachate collection design for a composite liner system (continued)	A geosynthetic clay liner used in lieu of part of the recompacted soil liner or in lieu of the recompacted soil barrier layer, shall comply with the design standards listed in <i>OAC 3745-27-08(D)(9)(a)</i> through (d).		<i>OAC 3745-27-08(D)(9)</i>
	A flexible membrane liner shall comply with the design standards listed in <i>OAC 3745-27-08(D)(10)(a)</i> through (f).		<i>OAC 3745-27-08(D)(10)</i>
	The liner cushion layer shall be placed above the flexible membrane liner and protect it from damage that may be caused by construction materials and activities and have preconstruction interface testing performed.		<i>OAC 3745-27-08(D)(11)</i>
	<i>Leachate collection layer</i> The leachate collection layer shall be placed above the composite liner system which may be protected by the cushion layer and shall comply with the standards in <i>OAC 3745-27-08(D)(12)(a)</i> and (b).		<i>OAC 3745-27-08(D)(12)</i>
	Leachate collection pipes shall comply with the design standards listed in <i>OAC 3745-27-08(D)(13)(a)</i> through (g).		<i>OAC 3745-27-08(D)(13)</i>
	The filter layer of the leachate collection and management system shall be placed above the leachate collection layer and leachate collection pipes and be designed to minimize clogging of the leachate collection layer, leachate collection pipes, and sumps.		<i>OAC 3745-27-08(D)(14)</i>
	Leachate collection and management system shall incorporate an adequate number of sumps that shall be protected from adverse effects from leachate and differential settling and be equipped with automatic high level alarms located no greater than 1 ft above the top elevation of sump.		<i>OAC 3745-27-08(D)(15)</i>

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Liner and leachate collection design for a composite liner system (continued)	Leachate collection and management system shall incorporate adequate measures that will automatically remove leachate from the landfill to leachate storage tank(s), a permitted discharge to a public sewer, or a permitted WWTU to facilitate the transfer of leachate from the storage tank(s) for the purpose of disposal.		OAC 3745-27-08(D)(16)
	Any leachate conveyance apparatus located outside the limits of solid waste placement shall be monitored, be double cased with a witness zone, and be protected from the effects of freezing temperatures, crushing, or excess deflection.		OAC 3745-27-08(D)(16)(a) – (c)
<i>Leachate storage tanks</i>	Leachate storage tanks shall have adequate storage capacity to receive the anticipated amount of leachate removed during normal operations from the leachate sumps to maintain a maximum 1 ft of head and at a minimum have at least 1 week of storage capacity using design assumptions simulating final closure.		OAC 3745-27-08(D)(17)
	Any leachate storage tanks located outside of the limits of solid waste placement shall be monitored and include one of the following: <ul style="list-style-type: none"> <li>For leachate ASTs, be provided with spill containment no less than 110% of tank volume.</li> <li>For leachate USTs, be double cased with a witness zone.</li> </ul>		OAC 3745-27-08(D)(17)(a) and (b)
Support facilities for a sanitary landfill	All access roads used for waste hauling that are constructed within the horizontal limits of waste placement shall not have grades in excess of 12% and be designed to be stable and to prevent damage to the liner or cap systems caused by the effects of traffic loading and braking or any other action.	Construction and operation of a sanitary landfill— <b>applicable</b>	OAC 3745-27-08(D)(18)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Closure of a solid waste landfill with a composite cap system	Design and construction of a recompacted soil barrier layer in the composite cap system shall comply with <i>OAC 3745-27-08(D)(21)(b)</i> through (g) as follows:	Closure of a sanitary waste landfill— <b>applicable</b>	<i>OAC 3745-27-08(D)(21)(a)</i>
	<ul style="list-style-type: none"> <li>• Be free of debris, foreign material, and deleterious material.</li> </ul>		<i>OAC 3745-27-08(D)(21)(b)</i>
	<ul style="list-style-type: none"> <li>• Not be comprised of solid waste.</li> </ul>		<i>OAC 3745-27-08(D)(21)(c)</i>
	<ul style="list-style-type: none"> <li>• Be placed above all areas of waste placement.</li> </ul>		<i>OAC 3745-27-08(D)(21)(d)</i>
	<ul style="list-style-type: none"> <li>• Not have any abrupt changes in grade that may result in damage to the geosynthetics</li> </ul>		<i>OAC 3745-27-08(D)(21)(e)</i>
	<ul style="list-style-type: none"> <li>• Have preconstruction testing of the borrow soils performed on representative samples and the results submitted to Ohio EPA no later than 7 days prior to intended use of the material in construction of the cap soil barrier layer. Preconstruction testing shall determine the maximum dry density and optimum moisture content, grain size distribution, and recompacted laboratory permeability.</li> </ul>		<i>OAC 3745-27-08(D)(21)(f)</i>
	<ul style="list-style-type: none"> <li>• Be constructed in lifts to achieve uniform compaction, in accordance with the substantive requirements of <i>OAC 3745-27-08(D)(21)(g)(i)(a)</i> through (e), (ii), and (iii).</li> </ul>		<i>OAC 3745-27-08(D)(21)(g)</i>
	<ul style="list-style-type: none"> <li>• Be adequately protected from damage due to desiccation, freeze/thaw cycles, wet/dry cycles, and the intrusion of objects during construction of the cap system</li> </ul>		<i>OAC 3745-27-08(D)(21)(h)</i>

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Closure of a solid waste landfill with a composite cap system (continued)	<ul style="list-style-type: none"> <li>Have QC control testing of the constructed lifts performed to determine the density and moisture content according to ASTM D2922-01 and ASTM D3017-01 (nuclear methods), ASTM D1556-00 (sand cone), ASTM D2167-94 (rubber balloon) or other methods acceptable to the director or his authorized representative at a frequency of no less than five tests per acre per lift. The locations of the individual tests shall be adequately spaced to represent the constructed area. Any penetrations shall be repaired using bentonite.</li> </ul>		OAC 3745-27-08(D)(21)(i)
	If a geosynthetic clay liner is used in the composite cap system in accordance with paragraph (D)(21) of this rule, it shall be placed above an engineered subbase designed and constructed in accordance OAC 3745-27-08(D)(22).		OAC 3745-27-08(D)(22)
	A cap geosynthetic clay liner meeting the requirements of paragraph (D)(9) of this rule shall be placed above the engineered subgrade in the composite cap system.		OAC 3745-27-08(D)(23)
	A cap flexible membrane liner meeting the requirements of paragraph (D)(10) of this rule shall be placed above the recompacted soil barrier layer or the geosynthetic clay liner in the composite cap system.		OAC 3745-27-08(D)(24)
	The cap drainage layer for the composite cap system shall comply with OAC 3745-27-08(D)(25).		OAC 3745-27-08(D)(25)
	For cap protection layers: a cap protection layer shall comply with OAC 3745-27-08(D)(26).		OAC 3745-27-08(D)(26)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

Media/Location/Action <sup>a</sup>	Requirements <sup>b</sup>	Prerequisite	Citation
Explosive gas control system design criteria	Explosive gas control system shall not compromise the integrity of the cap system, the leachate management system, or the composite liner system, and shall comply with the following: <ul style="list-style-type: none"> <li>Accommodate waste settlement</li> <li>Provide for the removal of condensate</li> <li>Prevent lateral movement of explosive gas from the sanitary landfill facility</li> <li>Prevent fires within the limits of solid waste placement</li> </ul>	Construction of a sanitary waste landfill— <b>applicable</b> if design includes explosive gas control system	OAC 3745-27-08(D)(27)  OAC 3745-27-08(D)(27)(a) OAC 3745-27-08(D)(27)(b) OAC 3745-27-08(D)(27)(c) OAC 3745-27-08(D)(27)(d)
Liner design criteria for a recompacted soil liner	The construction of the recompacted soil liner shall be modeled by an approved test pad in accordance with OAC 3745-27-08(E).	Construction of a sanitary waste landfill— <b>applicable</b>	OAC 3745-27-08(E)
Preconstruction interface testing and reporting	The specific soils and representative samples of the geosynthetic materials that will be used at the site shall be tested, in accordance with the substantive requirements of OAC 3745-27-08(G), for interface shear strength over the entire range of normal stresses that will develop at the facility.	Construction of a sanitary waste landfill— <b>applicable</b>	OAC 3745-27-08(G)
Final closure of sanitary landfill	Shall begin closure activities after one year of ceasing to receive solid waste and there is additional capacity remaining in the unit.  Shall begin closure activities for contiguous units of a sanitary landfill upon: <ul style="list-style-type: none"> <li>Owner/operator declares that all of the contiguous units will cease acceptance of solid waste by a date certain, or</li> <li>All approved limits of solid waste placement for all of the contiguous units have been reached.</li> </ul>	Closure of a sanitary landfill— <b>applicable</b>  Closure of a sanitary landfill— <b>applicable</b>	OAC 3745-27-11(C)(1)(e)  OAC 3745-27-11(C)(3)(a) OAC 3745-27-11(C)(3)(b)



**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Final closure of sanitary landfill (continued)	Shall comply with rule 3745-27-19 and all monitoring and reporting activities required during the operating life of the unit(s) until the closure certification is submitted and the postclosure care period begins.	Closure of a sanitary landfill— <b>applicable</b>	OAC 3745-27-11(H)(1)
	Shall install required surface water controls as shown in the final closure/postclosure plan, and, as necessary, grade all land surfaces to prevent ponding of water where solid waste has been placed and institute measures to control erosion.	Closure of a sanitary landfill— <b>applicable</b>	OAC 3745-27-11(H)(2)
	Shall bait for rodents and treat for other vectors as necessary.	Closure of a sanitary landfill— <b>applicable</b>	OAC 3745-27-11(H)(4)
	Upon ceasing acceptance of waste, shall post signs stating in letters not less than 3 in. high that the facility no longer accepts solid waste. This does not apply to sanitary landfills owned by a generator of solid wastes if the facility exclusively disposed of solid waste generated at the premises of the owner.	Operation of a facility accepting solid waste not generated at the site— <b>applicable</b>	OAC 3745-27-11(H)(6)
	Shall block all entrances and access roads to the sanitary landfill upon ceasing of accepting waste to prevent unauthorized access during the final closure and postclosure period.	Closure of a sanitary landfill— <b>applicable</b>	OAC 3745-27-11(H)(7)
	Final closure shall be completed not later than 180 days after any of the occurrences in paragraph c of this rule, unless an alternate schedule is approved.	Closure of a sanitary landfill— <b>applicable</b>	OAC 3745-27-11(I)
	Shall allow access to any of the unit(s) of a sanitary landfill during final closure to the health commissioner and the director.	Closure of a sanitary landfill— <b>applicable</b>	OAC 3745-27-11(K)
	Shall complete final closure of the unit(s) in a manner that minimizes the need for further maintenance and minimizes postclosure formation and release of leachate or explosive gases to protect human health and the environment.	Closure of a sanitary landfill— <b>relevant and appropriate</b>	OAC 3745-27-11(L)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Explosive gas migration monitoring	Shall prepare an explosive gas monitoring plan in compliance with the substantive requirements of <i>OAC 3745-27-12(D)</i> and (E).	Operation of a sanitary landfill— <b>relevant and appropriate</b> if calculated explosive gas emissions exceed calculated threshold limits of <i>OAC 3745-27-12(E)(5)(a)</i>	<i>OAC 3745-27-12</i>
Postclosure restrictions	Shall implement explosive gas monitoring, sampling, and reporting, and appropriate contingency plans if required, in accordance with the approved monitoring plan and with the substantive requirements of <i>OAC 3745-27-12(F)</i> through (K).		
	No person shall fill in, grade, excavate, build, drill, or mine on land where a hazardous or solid waste facility was operated without authorization from Ohio EPA.	Closure of a hazardous or solid waste disposal facility— <b>applicable</b>	<i>OAC 3745-27-13(A), (C) and (H)</i>
	If a person engages in filling, grading, excavating, building, drilling, or mining on land where a hazardous or solid waste facility was operated, must comply with the substantive best management provisions of <i>OAC 3745-27-13</i> .		<i>OAC 3745-27-13</i>
Postclosure care	Shall continue operating and maintaining any leachate management systems, surface water management systems, explosive gas extraction and/or control systems, explosive gas monitoring systems, and groundwater monitoring systems during the postclosure care period.	Postclosure care of a sanitary landfill— <b>applicable</b>	<i>OAC 3745-27-14(A)(1)</i>
	Shall maintain the integrity and effectiveness of the cap system, including necessary repairs.	Postclosure care of a sanitary landfill— <b>applicable</b>	<i>OAC 3745-27-14(A)(2)</i>
	Repair any leachate outbreaks detected at the facility by doing the following:	Postclosure care of a sanitary landfill— <b>applicable</b>	
	<ul style="list-style-type: none"> <li>Contain and properly manage the leachate</li> </ul>		<i>OAC 3745-27-14(A)(3)(a)</i>

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Postclosure care (continued)	<ul style="list-style-type: none"> <li>If necessary, collect, treat, and dispose of the leachate, including, if necessary, following the contingency plan for leachate storage and disposal prepared pursuant to rule 3745-27-19.</li> </ul>		OAC 3745-27-14(A)(3)(b)
	<ul style="list-style-type: none"> <li>Take action to minimize, control, or eliminate the conditions which contribute to the production of leachate.</li> </ul>		OAC 3745-27-14(A)(3)(c)
	Shall inspect the facility quarterly during each year of postclosure care.	Postclosure care of a sanitary landfill— <b>applicable</b>	OAC 3745-27-14(A)(4)
	Shall allow access to any of the unit(s) of a sanitary landfill during postclosure to the health commissioner and the director.	Postclosure care of a sanitary landfill— <b>applicable</b>	OAC 3745-27-14(D)
Activities causing dust, noise, or odors	Shall operate the facility in such a manner that noise, dust, and odors are strictly controlled so as to now cause a nuisance or health hazard.	Operation of a sanitary landfill— <b>applicable</b>	OAC 3745-27-19(B)(3)
Conditions that cause the presence of insects, rodents, and vectors	Shall operate the facility in such a manner that conditions are controlled for insects, rodent, and vectors and they do not cause a nuisance or health hazard. Supplemental vector control measures may be implemented if deemed necessary.	Operation of a sanitary landfill— <b>applicable</b>	OAC 3745-27-19(B)(4)
Activities causing release of pollutants, nuisances, or health hazards	Shall operate the facility in such a manner that operation does not create a nuisance or a health hazard or cause water pollution.	Operation of a sanitary landfill— <b>applicable</b>	OAC 3745-27-19(B)(5)
Placement of waste in first layer (“select waste layer”)	Shall place select waste as the first layer of waste in all areas within the limits of waste placement adjacent to or in contact with the leachate collection system to protect the composite liner from the intrusion of objects during operation of the facility. The select waste layer shall:	Operation of a sanitary landfill— <b>applicable</b>	OAC 3745-27-19(D)(1)
	<ul style="list-style-type: none"> <li>Be spread but not compacted.</li> <li>Not contain items over 2 ft in length that are capable of puncturing the liner.</li> </ul>		OAC 3745-27-19(D)(1)(a) OAC 3745-27-19(D)(1)(b)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Placement of waste in first layer (“select waste layer”) (continued)	<ul style="list-style-type: none"> <li>Not restrict the flow of liquid to the leachate collection and management system.</li> <li>Not contain fines or small particles which can clog the leachate collection system</li> <li>Be placed as a single lift above the leachate collection layer so a minimum distance of 5 ft is created between the liner and general waste.</li> </ul>		<p><i>OAC 3745-27-19(D)(1)(c)</i></p> <p><i>OAC 3745-27-19(D)(1)(d)</i></p> <p><i>OAC 3745-27-19(D)(1)(e)</i></p>
Site preparation	<p>Shall clear naturally occurring vegetation to the extent necessary for proper operation of the facility</p> <p>Any oil or gas wells within proposed limits of solid waste placement shall be properly plugged and abandoned in accordance with Chapter 1509 of the Revised Code.</p>	<p>Operation of a sanitary landfill—<b>applicable</b></p> <p>Operation of a sanitary landfill—<b>applicable</b></p>	<p><i>OAC 3745-27-19(E)(1)(a)</i></p> <p><i>OAC 3745-27-19(E)(1)(b)</i></p>
Facility maintenance and repair	Maintain integrity of the engineered components of the facility and repair any damage to or failure of the components.	Operation of a sanitary landfill— <b>applicable</b>	<i>OAC 3745-27-19(E)(1)(c)</i>
Chemical compatibility testing	Perform chemical compatibility testing if the director determines that such testing is necessary to demonstrate that the solid waste to be received at facility will not compromise the integrity of any material used to construct the facility.	Construction and operation of a sanitary landfill— <b>applicable</b>	<i>OAC 3745-27-19(E)(1)(d)</i>
Support facilities for a sanitary landfill	Construct and maintain all-weather access roads within facility boundary in such a manner as to withstand the anticipated degree of use and allow passage of loaded refuse vehicles at all times, with minimum of erosion and dust generation.	Construction and operation of a sanitary landfill— <b>applicable</b>	<i>OAC 3745-27-19(E)(2)(a)</i>
Security system for a sanitary landfill	Limit access to the facility by non-employees except during operating hours when operating personnel are present. Exclude live domestic and farm animals from the operating areas of the facility except for animals used for security purposes.	Construction and operation of a sanitary landfill— <b>applicable</b>	<i>OAC 3745-27-19(E)(2)(a), (b) and (d)</i>

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Content of contingency plan	Shall ensure that operable equipment of adequate size and quantity for facility operations are available at all times, or that an appropriate contingency plan is prepared to properly handle and dispose of waste materials in the event of equipment failure.	Operation of a sanitary landfill— <b>applicable</b>	OAC 3745-27-19(E)(3)(a)(b)
General operating criteria for sanitary landfills	Shall only conduct salvaging in a manner approved by the director. Scavenging is prohibited.	Operation of a sanitary landfill— <b>applicable</b>	OAC 3745-27-19(E)(4)
	Ensure preparations have been made such that during inclement weather the facility is able to receive, compact, and cover incoming waste. Preparations include, but are not limited to, designation and preparation of areas where waste will be deposited, compacted, and covered during inclement weather, construction and maintenance of all-weather roads, and stockpiling of cover material.	Operation of a sanitary landfill— <b>applicable</b>	OAC 3745-27-19(E)(6)
	Prior to accepting waste comply with all leachate requirements, discharge and emission requirements. Do not begin filling a new phase without completing the previous phase, except as necessary for proper operation. Confine unloading to the smallest area possible and provide knowledge supervision at the working face. Do not deposit waste that is burning or may cause fire at the working face. Except as provided in paragraphs (D)(1) and (E)(7)(d), deposit waste at the working face, spread in layers not more than 2 ft thick, and compact to smallest practical volume. Bulky material shall be compacted or otherwise managed in a way to ensure proper daily cover and dusty materials are handled in such a way to minimize dust generation.	Waste acceptance and placement— <b>applicable</b>	OAC 3745-27-19(E)(7)(a-f)
Disposal restrictions for sanitary landfills	Do not dispose of bulk liquids or non-containerized liquids without director authorization. Bulk liquid containers do not include small containers of a size found in solid waste from community operations.	Bulk containerized liquid disposal— <b>applicable</b>	OAC 3745-27-19(E)(8)(b)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Disposal restrictions for sanitary landfills (continued)	Do not dispose of yard waste or commingled yard waste.	Yard waste disposal— <b>applicable</b>	OAC 3745-27-19(E)(8) (f)
	Do not dispose of whole or shredded tires except if burned and meeting the definition of solid waste in OAC 3745-27-01 or in pieces from a scrap tire recovery facility or whole tires that could not be processed at a scrap tire recovery facility.	Scrap tire disposal— <b>applicable</b>	OAC 3745-27-19(E)(8) (g)
	Do not dispose of semi-solid material containing free liquids as determined by the paint filter liquids test (method 9095) without prior authorization.	Free liquid disposal— <b>applicable</b>	OAC 3745-27-19(E)(8) (h)(i)
Litter	Collect, properly contain, and dispose of scattered litter	Operation of a sanitary landfill— <b>applicable</b>	OAC 3745-27-19(E)(9)
Inspections	Inspect facility at least daily for ponding, erosion, and leachate outbreaks and record results on daily log forms.	Operation of a sanitary landfill— <b>applicable</b>	OAC 3745-27-19(E)(11)(a)
	Inspect sedimentation ponds and pond discharge structures, includes pipes, ditches, and culverts at least weekly for erosion, clogging, or failure and take prompt correction, if necessary and record results on daily log forms.		OAC 3745-27-19(E)(11)(b)
Daily cover	Daily cover shall be applied to all exposed solid waste by the end of the working day and in no event should the waste be exposed more than 24 hours after unloading. Daily cover shall be nonputrescible, not contain large objects, and shall not be a solid waste without prior authorization. Implementation requirements include the following:	Operation of a sanitary landfill— <b>applicable</b>	OAC 3745-27-19(F)
	<ul style="list-style-type: none"> <li>Where there is no leachate management system, a soil layer of at least 6 in. shall be used.</li> </ul>		OAC 3745-27-19(F)(2)
	<ul style="list-style-type: none"> <li>An alternative daily cover (including solid waste) can be used with director approval if it provides comparable level of protection of human health and the environment.</li> </ul>		OAC 3745-27-19(F)(3)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Daily cover (continued)	<ul style="list-style-type: none"> <li>Less frequent than daily application may be approved by the director if the alternate frequency provides comparable and adequate protection.</li> <li>Where there is a leachate management system, a soil layer a minimum of 6 in. thick shall be applied and maintained. The daily cover shall be removed prior to next waste placement so as not to impede the flow of leachate.</li> </ul>		<p><i>OAC 3745-27-19(F)(4)</i></p> <p><i>OAC 3745-27-19(F)(1)</i></p>
Intermediate cover	<p>To minimize infiltration, apply intermediate cover to all filled areas where additional waste is not to be deposited for 30 days. An alternate time period can be approved by the director.</p> <p>Intermediate cover material shall be nonputrescible, have low permeability, good compaction, cohesiveness, relatively uniform texture, and not contain large objects. A minimum of 12-in. soil layer shall be used unless other materials are demonstrated to the director to be comparable and as protective.</p> <p>Prior to next waste placement, the intermediate cover in an area shall be removed or otherwise prepared to not impede flow of leachate to a leachate management system.</p> <p>Protect the intermediate cover from erosion.</p>	Operation of a sanitary landfill— <b>applicable</b>	<p><i>OAC 3745-27-19(G)(1)</i></p> <p><i>OAC 3745-27-19(G)(2)</i></p> <p><i>OAC 3745-27-19(G)(3)</i></p> <p><i>OAC 3745-27-19(G)(4)</i></p>

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Run-on/runoff control systems	Ensure surface water is diverted from areas where solid waste is being, or has been, deposited. Ensure facility is designed, constructed, maintained, and provided with surface water control structures that control run-on and runoff of surface water. Structures shall ensure minimal erosion and infiltration of water through the cover material and cap system and shall be designed in accordance with <i>OAC 3745-27-08</i> . If ponding or erosion occurs where waste is being or has been deposited, shall undertake actions as necessary to correct conditions causing it. If substantial threat of surface water pollution exists, may be required to monitor the surface water.	Construction and operation of a sanitary landfill— <b>applicable</b>	<i>OAC 3745-27-19(J)(1) – (4)</i>
Leachate management at a solid waste landfill	If a leachate outbreak occurs at the facility, must repair all outbreaks and contain, properly manage, collect, and dispose of the leachate in accordance with <i>OAC 3745-27-19(K)(5)</i> and <i>(K)(6)</i> and take action to minimize, control, or eliminate the conditions which contribute to the production of leachate.	Construction and operation of a sanitary landfill— <b>applicable</b>	<i>OAC 3745-27-19(K)(1)</i>
	Maintain at least one lift station back-up pump at facility at all times.		<i>OAC 3745-27-19(K)(2)</i>
	Visually or physically inspect collection pipe network of leachate management system after placement of initial lift of waste to ensure that crushing has not occurred and inspect network annually thereafter to ensure that clogging has not occurred.		<i>OAC 3745-27-19(K)(3)</i>
	If approved, may temporarily store leachate within limits of waste placement until the leachate can be treated and disposed as outlined in the leachate contingency plan under <i>OAC 3745-27-19(K)(6)</i> .		<i>OAC 3745-27-19(K)(4)</i>



**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Leachate management at a solid waste landfill (continued)	Treat and dispose of collected leachate in accordance with <i>ORC</i> Chapter 6111 and with one of the following:	Operation of a sanitary landfill— <b>applicable</b>	<i>OAC</i> 3745-27-19(K)(5)
	<ul style="list-style-type: none"> <li>• Treat and dispose of collected leachate on site at the disposal facility</li> <li>• Pretreat collected leachate on site and dispose of off-site of facility</li> <li>• Treat and dispose of collected leachate off-site of facility</li> </ul>		
	Must plan for storage and disposal of leachate to address immediate and long-term steps, including the setting aside of land for the construction and operation of an on-site treatment facility, to be taken for leachate management in the event that leachate cannot be managed in accordance with <i>OAC</i> 3745-27-19(K)(5).	Operation of a sanitary landfill— <b>applicable</b>	<i>OAC</i> 3745-27-19(K)(6)
	If a substantial threat of water pollution exists from the leachate entering surface waters, the director or health commissioner may require the owner or operator to monitor the surface water.		<i>OAC</i> 3745-27-19(K)(7)
<b><i>Solid waste disposal</i></b>			
Disposal of solid wastes	Except as provided in paragraph (D) of <i>OAC</i> 3745-27-02, no person shall establish or modify a solid waste disposal facility without meeting the substantive criteria as follows:	Management and disposal of solid waste— <b>applicable</b>	<i>OAC</i> 3745-27-02(A)
	Disposal of solid wastes shall only be by the following methods or combination thereof:		<i>OAC</i> 3745-27-05(A)
	<ul style="list-style-type: none"> <li>• Disposal at a licensed sanitary landfill facility</li> </ul>		<i>OAC</i> 3745-27-05(A)(1)
	<ul style="list-style-type: none"> <li>• Incinerating at a licensed incinerator</li> </ul>		<i>OAC</i> 3745-27-05(A)(2)
	<ul style="list-style-type: none"> <li>• Composting at a licensed composting facility</li> </ul>		<i>OAC</i> 3745-27-05(A)(3)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Disposal of solid wastes (continued)	<ul style="list-style-type: none"> <li>Alternative disposal methods either as engineered fill or land application, provided use will not create a nuisance or harm human health or the environment and is capable of complying with other applicable laws.</li> </ul>		<i>OAC 3745-27-05(A)(4)</i>
Prohibition on open dumping of solid wastes	<p>Temporary storage of putrescible solid wastes in excess of 7 days, or temporary storage of any solid wastes where such storage causes a nuisance or health hazard shall be considered open dumping.</p> <p>No person shall conduct, permit, or allow open dumping. In the event that open dumping is or has occurred, person(s) responsible shall promptly remove and dispose or otherwise manage the solid waste and shall submit verification that the waste has been properly managed.</p>	<p>Temporary storage of solid waste prior to collection for disposal or transfer—<b>applicable</b></p> <p>Management and disposal of solid waste—<b>applicable</b></p>	<p><i>OAC 3745-27-03(A)(2)</i></p> <p><i>OAC 3745-27-05(C)</i></p>
Disposal of whole or shredded scrap tires	<p>Whole or shredded scrap tires cannot be disposed at a sanitary landfill with the exception of the following:</p> <ul style="list-style-type: none"> <li>Burned or partially burned scrap tires, pyrolytic oil, and contaminated soils provided those materials meet the definition of solid waste in <i>OAC 3745-27-01</i>.</li> <li>Scrap tire pieces from a scrap tire recovery facility that are the byproduct of scrap tire processing.</li> <li>Authorized beneficial uses of scrap tires pursuant to <i>OAC 3745-27-78</i>.</li> </ul>		<p><i>OAC 3745-27-19(E)(8)(g)</i></p> <p><i>OAC 3745-27-19(E)(8)(g)(i)</i></p> <p><i>OAC 3745-27-19(E)(8)(g)(ii)</i></p> <p><i>OAC 3745-27-19(E)(8)(g)(iii)</i></p>

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

Media/Location/Action <sup>a</sup>	Requirements <sup>b</sup>	Prerequisite	Citation
Disposal of whole or shredded scrap tires (continued)	<ul style="list-style-type: none"> <li>Whole scrap tires which could not be processed by a scrap tire recovery facility. The owner or operator of the scrap tire recovery facility shall complete a scrap tire shipping paper and record on the shipping paper why the scrap tires are not processable at the scrap tire recovery facility. This includes but is not limited to aircraft tires and forklift tires that are not processable due to their construction or scrap tires contaminated with mud or other materials that render the tires unsuitable for processing.</li> </ul>		OAC 3745-27-19(E)(8)(g)(iv)
<b>TSCA/PCB WASTES</b>			
<i>Design, construction, operation and closure of a TSCA chemical waste landfill</i>			
Siting and liner design requirements for a TSCA landfill	<p>Shall be located in thick, relatively impermeable formations such as large area clay pans. Where this is not possible, the soil shall have a high clay and silt content with the following parameters:</p> <ul style="list-style-type: none"> <li>In place soil thickness, 4 ft or compacted soil liner thickness, 3 ft</li> <li>Permeability (cm/sec), equal to or less than <math>1 \times 10^{-7}</math></li> <li>Percent soil passing No. 200 sieve &gt; 30</li> <li>Liquid limit, &gt; 30</li> <li>Plasticity index &gt; 15.</li> </ul> <p>Synthetic membrane liners shall be used when the hydrologic or geologic conditions at the landfill require such a liner in order to provide at least a permeability equivalent to that of the soils. A synthetic liner should be chemically compatible with PCBs.</p>	<p>Construction of a TSCA chemical waste landfill—<b>applicable</b></p> <p>Construction of a TSCA chemical waste landfill—<b>applicable</b></p>	<p>40 CFR 761.75(b)(1)</p> <p>40 CFR 761.75(b)(1)(i)</p> <p>40 CFR 761.75(b)(1)(ii)</p> <p>40 CFR 761.75(b)(1)(iii)</p> <p>40 CFR 761.75(b)(1)(iv)</p> <p>40 CFR 761.75(b)(1)(v)</p> <p>40 CFR 761.75(b)(2)</p>

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Siting and liner design requirements for a TSCA landfill (continued)	Adequate soil underlining and cover shall be provided to prevent excessive stress or rupture of the liner. The liner must have a minimum thickness of 30 mil.		
	The landfill must be located above the historical high groundwater table. The bottom of the landfill liner shall be at least 50 ft above the historical high water table. Floodplains, shorelands, and groundwater recharge areas shall be avoided. There shall be no hydraulic connection between the site and standing or flowing surface water.	Construction of a TSCA chemical waste landfill— <b>applicable</b>	40 <i>CFR</i> 761.75(b)(3)
	Shall provide diversion structures capable of diverting all surface water runoff from a 24-hour, 25-year storm.	Construction of a TSCA chemical waste landfill above the 100-year floodwater elevation— <b>applicable</b>	40 <i>CFR</i> 761.75(b)(4)(ii)
	The landfill site shall be located in an area of low to moderate relief to minimize erosion and to help prevent landslides or slumping.	Construction of a TSCA chemical waste landfill— <b>applicable</b>	40 <i>CFR</i> 761.75(b)(5)
	The landfill will not present an unreasonable risk of injury to health or the environment from PCBs when one or more of the requirements of 40 <i>CFR</i> 761.75(b) are not met, these requirements may be waived.		40 <i>CFR</i> 761.75(c)(4)
Monitoring at a TSCA chemical waste landfill	The groundwater and surface water from the disposal site area must be sampled prior to commencing operation for use as baseline data.	Operation of a TSCA chemical waste landfill— <b>applicable</b>	40 <i>CFR</i> 761.75(b)(6)(i)(A)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Placement and construction of groundwater monitoring wells at a TSCA chemical waste landfill	<p>If underlying earth materials are homogenous, impermeable, and uniformly sloping in one direction, only three sampling points shall be necessary.</p> <p>The points shall be equally spaced on a line through center of disposal area and extending from the area of highest water table elevation to the area of the lowest water table elevation.</p> <p>All TSCA monitoring wells shall be cased and the annular space between the monitor zone (zone of saturation) and the surface shall be completely backfilled with Portland cement or an equivalent material and plugged with Portland cement to effectively prevent percolation of surface water into the well bore. The well opening at the surface shall have a removable cap to provide access and to prevent entrance of rainfall or stormwater runoff.</p>	<p>Operation of TSCA chemical waste landfill groundwater monitoring program—<b>applicable</b></p> <p>Construction of a TSCA groundwater monitoring well—<b>applicable</b></p>	<p>40 <i>CFR</i> 761.75(b)(6)(ii)(A)</p> <p>40 <i>CFR</i> 761.75(b)(6)(ii)(B)</p>
Groundwater monitoring at a TSCA chemical waste landfill	The groundwater monitoring well shall be pumped to remove the volume of liquid initially contained in the well before obtaining a sample for analysis.	Operation of TSCA groundwater monitoring wells— <b>applicable</b>	40 <i>CFR</i> 761.75(b)(6)(ii)(B)
Monitoring (surface or groundwater) at a TSCA chemical waste landfill	<p>At a minimum, all samples shall be analyzed for PCBs, pH, specific conductance, and chlorinated organics. Sampling methods and analytical procedures for these parameters shall comply with those specified in 40 <i>CFR</i> 136 as amended in 41 FR 52779 on December 1, 1976.</p> <p>The discharge shall be treated to meet applicable State or Federal standards or recycled to the chemical waste landfill.</p>	Operation of a TSCA chemical waste landfill— <b>applicable</b>	40 <i>CFR</i> 761.75(b)(6)(iii)
Leachate collection system for TSCA landfill	A leachate collection monitoring system shall be installed above the chemical waste landfill. An acceptable system includes a compound leachate collection.	Construction of a TSCA chemical waste landfill— <b>applicable</b>	40 <i>CFR</i> 761.75(b)(7)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Leachate collection system for TSCA landfill (continued)	Compound leachate collection system consists of a gravity flow drainfield installed above the waste disposal facility liner and above a secondary installed liner.		40 <i>CFR</i> 761.75(b)(7)(ii)
Leachate collection system monitoring and handling	Leachate collection systems shall be monitored monthly for quantity and physicochemical characteristics of leachate produced. The leachate should be either treated to acceptable limits for discharge in accordance with legally applicable discharge limits or disposed of by another legally appropriate method. Water analysis shall be conducted as provided in Paragraph (b)(6)(iii) of 40 <i>CFR</i> 761.75.	Construction of a TSCA chemical waste landfill— <b>applicable</b>	40 <i>CFR</i> 761.75(b)(7)
Inventory requirements	Disposal records shall include information on the PCB concentration in the liquid wastes and the three dimensional burial coordinates for PCBs and PCB items.	Operation of a TSCA chemical waste landfill— <b>applicable</b>	40 <i>CFR</i> 761.75(b)(8)(iv)
Security and support facilities for TSCA chemical waste landfill	A 6-ft woven mesh fence, wall, or similar device shall be placed around the site to prevent unauthorized persons and animals from entering.	Construction of a TSCA chemical waste landfill— <b>applicable</b>	40 <i>CFR</i> 761.75(b)(9)(i)
	Roads shall be maintained to and within the site that are adequate to support the operation and maintenance of the site without causing safety or nuisance problems or hazardous conditions.		40 <i>CFR</i> 761.75(b)(9)(ii)
Operation of a TSCA chemical waste landfill	Site shall be operated and maintained to prevent hazardous conditions resulting from spilled liquids and windblown materials.	Operation of a TSCA chemical waste landfill— <b>applicable</b>	40 <i>CFR</i> 761.75(b)(9)(iii)
<b><i>PCB waste generation, characterization, and segregation</i></b>			
Torch-cutting of metal coated with paint that may contain PCBs	No person may openly burn PCBs. Combustion of PCBs by incineration as approved under Section 761.60 (a) or (e), or otherwise allowed under 40 <i>CFR</i> 761, is not open burning.	Management of PCB waste for storage or disposal— <b>applicable</b>	40 <i>CFR</i> 761.50(a)(1)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Management of PCB waste	Any person storing or disposing of PCB waste must do so in accordance with 40 <i>CFR</i> 761, Subpart D.	Storage or disposal of waste containing PCBs at concentrations $\geq$ 50 ppm— <b>applicable</b>	40 <i>CFR</i> 761.50(a)
	Any person cleaning up and disposing of PCBs shall do so based on the concentration at which the PCBs are found.	Cleanup or disposal of PCB remediation waste as defined in 40 <i>CFR</i> 761.3— <b>applicable</b>	40 <i>CFR</i> 761.61
Cleanup of new PCB spills	Spills shall be cleaned up in accordance with 40 <i>CFR</i> 761, Subpart G, “PCB Spill Cleanup Policy.” This policy does not apply to existing spills (old spills which occurred prior to May 4, 1987).	Release into the environment of materials containing PCBs at $\geq$ 50 ppm, which occurs after May 4, 1987— <b>applicable</b>	40 <i>CFR</i> 761.125
	There may be exceptional spill situations that require less stringent cleanup or a different approach to cleanup because of factors associated with the particular spill. These factors may mitigate expected exposures and risks or make cleanup to these requirements impracticable.		40 <i>CFR</i> 761.120(a)(4)
Decontamination of PCB contaminated materials prior to use, reuse, distribution in commerce, or disposal as a non-TSCA waste	Chopping (including wire chopping), distilling, filtering, oil/water separation, spraying, soaking, wiping, stripping of insulation, scraping, scarification or the use of abrasives or solvents may be used to remove or separate PCBs to the decontamination standards for liquids, concrete, or nonporous surfaces, as listed in 40 <i>CFR</i> 761.79(b).	Generation of PCB wastes, including water, organic liquids, nonporous surfaces (scrap metal from disassembled electrical equipment), concrete, and nonporous surfaces covered with porous surfaces, such as paint or coating on metal— <b>applicable</b>	40 <i>CFR</i> 761.79(b)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Decontamination of water containing PCBs to levels acceptable for discharge	For water discharged to a treatment works or to navigable waters, decontaminate to < 3 µg/L (approximately < 3 ppb) or a PCB discharge limit included in a permit issued under Section 304(b) or 402 of the CWA; or	Discharge of water containing PCBs to a treatment works or navigable waters— <b>applicable</b>	40 <i>CFR</i> 761.79(b)(1)(ii)
Decontamination of water containing PCBs to levels acceptable for unrestricted use	Decontaminate to ≤ 0.5 µg/L (approximately ≤ 0.5 ppb) for unrestricted use.	Release of water containing PCBs for unrestricted use— <b>applicable</b>	40 <i>CFR</i> 761.79(b)(1)(iii)
Decontamination of organic liquids or nonaqueous inorganic liquids containing PCBs	For organic liquids or nonaqueous inorganic liquids containing PCBs, decontamination standard is < 2 mg/kg (i.e., < 2 ppm) PCBs.	Release of organic liquids or nonaqueous liquid containing PCBs— <b>applicable</b>	40 <i>CFR</i> 761.79(b)(2)
Decontamination of nonporous surfaces in contact with liquid PCBs to levels acceptable for unrestricted use	For nonporous surfaces previously in contact with liquid PCBs at any concentration, where no free-flowing liquids are currently present, ≤ 10 µg PCBs per 100 sq cm (≤ 10 µg/100 cm <sup>2</sup> ) as measured by a standard wipe test (40 <i>CFR</i> 761.123) at locations selected in accordance with Subpart P of 40 <i>CFR</i> 761.	Release of nonporous surfaces in contact with liquid PCBs at any concentration for unrestricted use— <b>applicable</b>	40 <i>CFR</i> 761.79(b)(3)(i)(A)
Decontamination of nonporous surfaces in contact with nonliquid PCBs to levels acceptable for unrestricted use	For nonporous surfaces in contact with nonliquid PCBs (including nonporous surfaces covered with a porous surface, such as paint or coating on metal), clean to Visual Standard No. 2, Near-White Blast Cleaned Surface Finish of the NACE. A person shall verify compliance with standard No. 2 by visually inspecting all cleaned areas.	Release of nonporous surfaces in contact with nonliquid PCBs for unrestricted use— <b>applicable</b>	40 <i>CFR</i> 761.79(b)(3)(i)(B)



**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Decontamination of nonporous surfaces in contact with liquid PCBs to levels acceptable for disposal in a TSCA smelter	For nonporous surfaces previously in contact with liquid PCBs at any concentration, where no free-flowing liquids are currently present, decontaminate to < 100 µg/100 cm <sup>2</sup> as measured by a standard wipe test (Section 761.123) at locations selected in accordance with Subpart P of 40 <i>CFR</i> 761.	Disposal of nonporous surfaces previously in contact with liquid PCBs at any concentration into a smelter operating in accordance with Section 761.72(b) — <b>applicable</b>	40 <i>CFR</i> 761.79(b)(3)(ii)(A)
Decontamination of nonporous surfaces in contact with nonliquid PCBs to levels acceptable for disposal in a TSCA smelter	For nonporous surfaces in contact with nonliquid PCBs (including nonporous surfaces covered with a porous surface, such as paint or coating on metal) clean to Visual Standard No. 3, Commercial Blast Cleaned Surface Finish, of the NACE. A person shall verify compliance with Standard No. 3 by visually inspecting all cleaned areas.	Disposal of nonporous surfaces in contact with nonliquid PCBs into a smelter operating in accordance with Section 761.72(b) — <b>applicable</b>	40 <i>CFR</i> 761.79(b)(3)(ii)(B)
Decontamination of concrete recently contaminated with PCBs	Decontamination standard for concrete is < 10 µg/100 cm <sup>2</sup> as measured by a standard wipe test (Section 761.123) if the decontamination procedure is commenced within 72 hours of the initial spill of PCBs to the concrete or portion thereof being decontaminated.	Decontamination of concrete within 72 hours of the initial spill of PCBs to the concrete— <b>applicable</b>	40 <i>CFR</i> 761.79(b)(4)
Disposal of materials previously contaminated with PCBs as non-TSCA waste	Materials from which PCBs have been removed by decontamination in accordance with 40 <i>CFR</i> 761.79, not including decontamination wastes and residuals under 40 <i>CFR</i> 761.79(g), are considered unregulated for disposal under Subpart D of TSCA (40 <i>CFR</i> 761).	Disposal of materials from which PCBs have been removed— <b>applicable</b>	40 <i>CFR</i> 761.79(a)(4)
Risk-based decontamination of PCB-containing materials	May decontaminate to an alternate risk-based decontamination standard under 40 <i>CFR</i> 761.79(h) if the standard does not pose an unreasonable risk of injury to health or the environment.	Decontamination of materials contaminated with PCBs — <b>applicable</b>	40 <i>CFR</i> 761.79(h)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

Media/Location/Action <sup>a</sup>	Requirements <sup>b</sup>	Prerequisite	Citation
Management of PCB/radioactive waste	Any person storing such waste $\geq$ 50 ppm PCBs must do so taking into account both its PCB concentration and radioactive properties, except as provided in 40 <i>CFR</i> 761.65(a)(1), (b)(1)(ii), and (c)(6)(i).	Generation of PCB/radioactive waste for disposal— <b>applicable</b>	40 <i>CFR</i> 761.50(b)(7)(i)
	Any person disposing of such waste must do so taking into account both its PCB concentration and its radioactive properties.		40 <i>CFR</i> 761.50(b)(7)(ii)
	If, after taking into account only the PCB properties in the waste, the waste meets the requirements for disposal in a facility permitted, licensed, or registered by a State as a municipal or nonmunicipal nonhazardous waste landfill, then the person may dispose of such waste without regard to the PCBs, based on its radioactive properties alone.		40 <i>CFR</i> 761.50(b)(7)(ii)
<b>PCB waste storage</b>			
Temporary storage of PCB waste in a non-RCRA-regulated area	Except as provided in 40 <i>CFR</i> 761.65 (b)(2), (c)(1), (c)(7), (c)(9), and (c)(10), after July 1, 1978, facilities used for the storage of PCBs and PCB items designated for disposal shall comply with the storage unit requirements in 40 <i>CFR</i> 761.65(b)(1).	Storage of PCBs and PCB items at concentrations $\geq$ 50 ppm for disposal— <b>applicable</b>	40 <i>CFR</i> 761.65(b)
	The facilities shall meet the following criteria:		40 <i>CFR</i> 761.65(b)(1)
	<ul style="list-style-type: none"> <li>Adequate roof and walls to prevent rain water from reaching the stored PCBs and PCB Items</li> </ul>		40 <i>CFR</i> 761.65(b)(1)(i)
	<ul style="list-style-type: none"> <li>Adequate floor that has continuous curbing with a minimum 6-in.-high curb. Floor and curb must provide a containment volume equal to at least two times the internal volume of the largest PCB article or container or 25% of the internal volume of all articles or containers stored there, whichever is greater. <i>Note:</i> 6-in. minimum curbing not required for area storing PCB/radioactive waste.</li> </ul>		40 <i>CFR</i> 761.65(b)(1)(ii)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

Media/Location/Action <sup>a</sup>	Requirements <sup>b</sup>	Prerequisite	Citation
Temporary storage of PCB waste in a non-RCRA-regulated area (continued)	<ul style="list-style-type: none"> <li>No drain valves, floor drains, expansion joints, sewer lines, or openings that permit liquids to flow from curbed area</li> </ul>		40 <i>CFR</i> 761.65(b)(1)(iii)
	<ul style="list-style-type: none"> <li>Floors and curbing constructed of Portland cement, concrete, or a continuous, smooth, nonporous surface as defined at Section 761.3, which prevents or minimizes penetration of PCBs and</li> </ul>		40 <i>CFR</i> 761.65(b)(1)(iv)
	<ul style="list-style-type: none"> <li>Not located at site below 100-year flood water elevation.</li> </ul>		40 <i>CFR</i> 761.65(b)(1)(v)
Temporary storage of PCB waste in a RCRA-regulated area	Does not have to meet storage unit requirements in 40 <i>CFR</i> 761.65(b)(1) provided unit is stored in compliance with RCRA and PCB spills are cleaned up in accordance with Subpart G of 40 <i>CFR</i> 761.	Storage of PCBs and PCB items at concentrations $\geq$ 50 ppm for disposal— <b>applicable</b>	40 <i>CFR</i> 761.65(b)(2)(i) thru (iv)
Temporary storage of PCB waste in containers	Container(s) shall be marked as illustrated in 40 <i>CFR</i> 761.45(a).	Storage of PCBs and PCB items at concentrations $\geq$ 50 ppm for disposal— <b>applicable</b>	40 <i>CFR</i> 761.40(a)(1)
	Storage area must be properly marked as required by 40 <i>CFR</i> 761.40(a)(10).		40 <i>CFR</i> 761.65(c)(3)
	Any leaking PCB Items and their contents shall be transferred immediately to a properly marked nonleaking container(s).		40 <i>CFR</i> 761.65(c)(5)
	Except as provided in 40 <i>CFR</i> 761.65(c)(6)(i) and (ii), container(s) shall be in accordance with requirements set forth in DOT HMR at 49 <i>CFR</i> 171-180.		40 <i>CFR</i> 761.65(c)(6)
	Items shall be dated when they are removed from service and the storage shall be managed so that PCB items can be located by this date. (Note: Date should be marked on the container.)	PCB items (includes PCB wastes) removed from service for disposal— <b>applicable</b>	40 <i>CFR</i> 761.65(c)(8)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Temporary storage of PCB remediation waste or PCB bulk product waste in a TSCA waste pile	Waste must be placed and managed in accordance with the design and operation standards, including liner and cover requirements and runoff control systems, in 40 <i>CFR</i> 761.65(c)(9).	Storage of PCB remediation waste or PCB bulk product waste at cleanup site or site of generation— <b>applicable</b>	40 <i>CFR</i> 761.65(c)(9)(i)
	Requirements of 40 <i>CFR</i> 761.65(c)(9) of this part may be modified under the risk-based disposal option of Section 761.61(c).		40 <i>CFR</i> 761.65(c)(9)(iv)
Risk-based storage of PCB remediation waste or bulk product waste prior to disposal	May store in a manner other than prescribed in 40 <i>CFR</i> 761.65 if the method will not pose an unreasonable risk of injury to health or the environment.	Storage of PCB remediation waste or bulk product waste prior to disposal— <b>applicable</b>	40 <i>CFR</i> 761.61(c) 40 <i>CFR</i> 761.62(c)
Storage of PCB/radioactive waste in containers	For liquid wastes, containers must be nonleaking. For nonliquid wastes, containers must be designed to prevent buildup of liquids if such containers are stored in an area meeting the containment requirements of 40 <i>CFR</i> 761.65(b)(1)(ii); and	Storage of PCB/radioactive waste in containers other than those meeting DOT HMR performance standards— <b>applicable</b>	40 <i>CFR</i> 761.65(c)(6)(i)(A) 40 <i>CFR</i> 761.65(c)(6)(i)(B)
	For both liquid and nonliquid wastes, containers must meet all regulations and requirements pertaining to nuclear criticality safety.		40 <i>CFR</i> 761.65(c)(6)(i)(C)
Closure of TSCA storage facility	Must close in a manner that eliminates the potential for postclosure releases of PCBs which may present an unreasonable risk to human health or the environment.	Closure of a TSCA storage facility— <b>applicable</b>	40 <i>CFR</i> 761.65(e)(1)
	Must remove or decontaminate PCB waste residues and contaminated containment system components, equipment, structures, and soils during closure in accordance with levels specified in the PCB Spills Cleanup Policy in Subpart G of 40 <i>CFR</i> 761.		40 <i>CFR</i> 761.65(e)(1)(iv)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Closure of TSCA storage facility (continued)	A TSCA/RCRA storage facility closed under RCRA is exempt from the TSCA closure requirements of 40 <i>CFR</i> 761.65(e).	Closure of a TSCA/RCRA storage facility— <b>applicable</b>	40 <i>CFR</i> 761.65(e)(3)
<b><i>PCB waste treatment/disposal</i></b>			
Disposal of TSCA PCB waste in a chemical waste landfill	Must be placed in manner that will prevent damage to containers or articles. Other wastes that are not chemically compatible with PCBs shall be segregated from the PCBs throughout the handling and disposal process.	Disposal of PCBs or PCB Items in chemical waste landfill— <b>applicable</b>	40 <i>CFR</i> 761.75(b)(8)(i)
	May be disposed of provided such waste is pretreated and/or stabilized (e.g., chemically fixed, evaporated, mixed with dry inert absorbent) to reduce its liquid content or increase its solid content so that a nonflowing consistency is achieved to eliminate the presence of free liquids prior to final disposal.	Disposal of PCB bulk liquids not exceeding 500 ppm— <b>applicable</b>	40 <i>CFR</i> 761.75(b)(8)(ii)
	May be disposed of if each container is surrounded by an amount of inert sorbent material capable of absorbing all of the liquid contents of the container.	Disposal of PCB container with liquid PCB between 50 and 500 ppm— <b>applicable</b>	40 <i>CFR</i> 761.75(b)(8)(ii)
	Ignitable wastes shall not be disposed of in chemical waste landfills.	Disposal of PCBs in a chemical waste landfill— <b>applicable</b>	40 <i>CFR</i> 761.75(b)(8)(iii)
Performance-based disposal of PCB remediation waste	Shall be disposed according to 40 <i>CFR</i> 761.60(a) or (e), or decontaminated in accordance with 40 <i>CFR</i> 761.79.	Disposal of liquid PCB remediation waste— <b>applicable</b>	40 <i>CFR</i> 761.61(b)(1)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Performance-based disposal of PCB remediation waste (continued)	May dispose by one of the following methods: <ul style="list-style-type: none"> <li>In a high-temperature incinerator approved under 40 <i>CFR</i> 761.70(b)</li> <li>By an alternate disposal method under 40 <i>CFR</i> 761.60(e)</li> <li>In a chemical waste landfill under 40 <i>CFR</i> 761.75</li> <li>In a facility under 40 <i>CFR</i> 761.77, or</li> <li>Through decontamination in accordance with 40 <i>CFR</i> 761.79.</li> </ul>	Disposal of nonliquid PCB remediation waste (as defined in 40 <i>CFR</i> 761.3)— <b>applicable</b>	40 <i>CFR</i> 761.61(b)(2)  40 <i>CFR</i> 761.61(b)(2)(i)       40 <i>CFR</i> 761.61(b)(2)(ii)
Risk-based disposal of PCB remediation waste	May dispose of in a manner other than prescribed in 40 <i>CFR</i> 761.61(a) or (b) if the method will not pose an unreasonable risk of injury to health or the environment.	Disposal of PCB remediation waste— <b>applicable</b>	40 <i>CFR</i> 761.61(c)
Disposal of PCB decontamination waste and residues	Shall be disposed at their existing PCB concentration unless otherwise specified in 40 <i>CFR</i> 761.79(g).	PCB decontamination waste and residues for disposal— <b>applicable</b>	40 <i>CFR</i> 761.79(g)
Disposal of PCB liquids (e.g., from drained electrical equipment)	Must be disposed of in an incinerator which complies with 40 <i>CFR</i> 761.70, except:	PCB liquids at concentrations ≥ 50 ppm— <b>applicable</b>	40 <i>CFR</i> 761.60(a)
	For mineral oil dielectric fluid, may be disposed in a high efficiency boiler according to 40 <i>CFR</i> 761.71(a).	PCB liquids at concentrations ≥ 50 ppm and < 500 ppm— <b>applicable</b>	40 <i>CFR</i> 761.60(a)(1)
	For liquids other than mineral oil dielectric fluid, may be disposed in a high efficiency boiler according to 40 <i>CFR</i> 761.71(b).		40 <i>CFR</i> 761.60(a)(2)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Disposal of PCB-contaminated precipitation, condensation, or leachate	May be disposed in a chemical waste landfill which complies with 40 <i>CFR</i> 761.75 if: <ul style="list-style-type: none"> <li>• Disposal does not violate 40 <i>CFR</i> 268.32(a) or 268.42(a)(1) and</li> <li>• Liquids do not exceed 500 ppm and are not ignitable waste as described in 40 <i>CFR</i> 761.75(b)(8)(iii).</li> </ul>	PCB liquids at concentrations $\geq$ 50 ppm from incidental sources and associated with PCB articles or nonliquid PCB wastes— <b>applicable</b>	40 <i>CFR</i> 761.60(a)(3)  40 <i>CFR</i> 761.60(a)(3)(i)  40 <i>CFR</i> 761.60(a)(3)(ii)
Disposal of PCB transformers	Shall be disposed of in one of the following: <ul style="list-style-type: none"> <li>• An incinerator that complies with 40 <i>CFR</i> 761.70</li> <li>• A chemical waste landfill that is compliant with 40 <i>CFR</i> 761.75 provided all free-flowing liquid is removed from the transformer, the transformer is filled with a solvent, the transformer is allowed to stand for at least 18-continuous hours, and then the solvent is thoroughly removed.</li> </ul>	Disposal of PCB transformers that contain PCBs at concentrations of $\geq$ 500 ppm in the contaminating fluid as defined in 40 <i>CFR</i> 761.3— <b>applicable</b>	40 <i>CFR</i> 761.60(b)(1) 40 <i>CFR</i> 761.60(b)(1)(i)(A) 40 <i>CFR</i> 761.60(b)(1)(i)(B)
Performance-based disposal of PCB bulk product waste	May dispose of by one of the following: <ul style="list-style-type: none"> <li>• In an incinerator under 40 <i>CFR</i> 761.70</li> <li>• In a chemical waste landfill under 40 <i>CFR</i> 761.75</li> <li>• In a hazardous waste landfill under Section 3004 or Section 3006 of RCRA</li> <li>• Under alternate disposal under 40 <i>CFR</i> 761.60(e)</li> <li>• In accordance with decontamination provisions of 40 <i>CFR</i> 761.79</li> <li>• In accordance with the thermal decontamination provisions of 40 <i>CFR</i> 761.79(e)(6) for metal surfaces in contact with PCBs.</li> </ul>	Disposal of PCB bulk product waste as defined in 40 <i>CFR</i> 761.3— <b>applicable</b>	40 <i>CFR</i> 761.62(a) 40 <i>CFR</i> 761.62(a)(1) 40 <i>CFR</i> 761.62(a)(2)  40 <i>CFR</i> 761.62(a)(3)  40 <i>CFR</i> 761.62(a)(4)  40 <i>CFR</i> 761.62(a)(5)  40 <i>CFR</i> 761.62(a)(6)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Risk-based disposal of PCB bulk product waste	May dispose of in a manner other than that prescribed in 40 <i>CFR</i> 761.62(a) if approved in writing by EPA and method will not pose an unreasonable risk of injury to health or the environment.	Disposal of PCB bulk product waste as defined in 40 <i>CFR</i> 761.3— <b>applicable</b>	40 <i>CFR</i> 761.62(c)
Disposal of PCB bulk product waste in solid waste landfill	May dispose of the following in a municipal or nonmunicipal nonhazardous waste landfill:	Disposal of nonliquid PCB bulk product waste listed in 40 <i>CFR</i> 761.62(b)(1)— <b>applicable</b>	40 <i>CFR</i> 761.62(b)(1)
	<ul style="list-style-type: none"> <li>Plastics (such as plastic insulation from wire or cable; radio, television and computer casings; vehicle parts; or furniture laminates); preformed or molded rubber parts and components; applied dried paints, varnishes, waxes or other similar coatings or sealants; caulking; Galbestos; nonliquid building demolition debris; or nonliquid PCB bulk product waste from the shredding of automobiles or household appliances from which PCB small capacitors have been removed (shredder fluff)</li> </ul>		40 <i>CFR</i> 761.62(b)(1)(i)
	<ul style="list-style-type: none"> <li>Other PCB bulk product waste, sampled in accordance with the protocols set out in subpart R of 40 <i>CFR</i> Part 761 that leaches PCBs at &lt; 10 µg/L of water measured using a procedure used to simulate leachate generation.</li> </ul>		40 <i>CFR</i> 761.62(b)(1)(ii)
	May dispose of in a municipal or nonmunicipal nonhazardous waste landfill if:	PCB bulk product waste not meeting conditions of 40 <i>CFR</i> 761.62(b)(1) (e.g., paper/felt gaskets contaminated by liquid PCBs)— <b>applicable</b>	40 <i>CFR</i> 761.62(b)(2)
	<ul style="list-style-type: none"> <li>The PCB bulk product waste is segregated from organic liquids disposed of in the landfill and</li> <li>Leachate is collected from the landfill and monitored for PCBs.</li> </ul>		40 <i>CFR</i> 761.62(b)(2)(i) 40 <i>CFR</i> 761.62(b)(2)(ii)



**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Disposal of fluorescent light ballasts	Must be disposed of in a TSCA disposal facility as bulk product waste under 40 <i>CFR</i> 761.62 or in accordance with the decontamination provisions of 40 <i>CFR</i> 761.79.	Generation for disposal of fluorescent light ballasts containing PCBs in the potting material— <b>applicable</b>	40 <i>CFR</i> 761.60(b)(6)(iii)
Disposal of PCB-contaminated electrical equipment (except capacitors)	Must remove all free-flowing liquid from the electrical equipment and dispose of the removed liquid in accordance with 40 <i>CFR</i> 761.60(a) and	Generation of PCB-contaminated electrical equipment (as defined in 40 <i>CFR</i> 761.3) for disposal— <b>applicable</b>	40 <i>CFR</i> 761.60(b)(4)
	Dispose of by one of the following methods: <ul style="list-style-type: none"> <li>• In a facility managed as a municipal solid waste or nonmunicipal nonhazardous waste facility</li> <li>• In an industrial furnace operating in compliance with 40 <i>CFR</i> 761.72, or</li> <li>• In a disposal facility under 40 <i>CFR</i> 761.60.</li> </ul>	Drained PCB-contaminated electrical equipment including any residual liquids— <b>applicable</b>	40 <i>CFR</i> 761.60(b)(4)(i)
Disposal of PCB capacitor(s)	Any person must assume that a capacitor manufactured prior to July 2, 1979, whose PCB concentration is not established, contains ≥ 500 ppm PCBs. If the date of manufacture is unknown, any person must assume the capacitor contains ≥ 500 ppm PCBs.	Generation of PCB capacitors with ≥ 500 ppm PCBs for disposal— <b>applicable</b>	40 <i>CFR</i> 761.2(a)(4)
	Shall comply with all requirements of 40 <i>CFR</i> 761.60 unless it is known from label or nameplate information, manufacturer's literature, or chemical analysis that capacitor does not contain PCBs.		40 <i>CFR</i> 761.60(b)(2)(i)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

Media/Location/Action <sup>a</sup>	Requirements <sup>b</sup>	Prerequisite	Citation
Disposal of PCB capacitor(s) (continued)	Shall dispose of in accordance with either of the following: <ul style="list-style-type: none"> <li>Disposal in an incinerator that complies with 40 <i>CFR</i> 761.70</li> <li>Disposal in a chemical waste landfill that complies with 40 <i>CFR</i> 761.75.</li> </ul>	Generation of PCB capacitors with ≥ 500 ppm PCBs for disposal— <b>applicable</b>	40 <i>CFR</i> 761.60(b)(2)(iii)
	Shall dispose of in one of the following disposal facilities approved under 40 <i>CFR</i> 761.60: <ul style="list-style-type: none"> <li>Incinerator under 40 <i>CFR</i> 761.70</li> <li>Chemical waste landfill under 40 <i>CFR</i> 761.75</li> <li>High efficiency boiler under 40 <i>CFR</i> 761.71</li> <li>Scrap metal recovery oven or smelter under 40 <i>CFR</i> 761.72</li> </ul>	Disposal of large capacitors that contain ≥ 50 ppm but < 500 ppm PCBs— <b>applicable</b>	40 <i>CFR</i> 761.60(b)(4)(ii)
	May dispose of in municipal solid waste landfill.	Generation of PCB small capacitors (as defined in 40 <i>CFR</i> 761.3) for disposal—applicable	40 <i>CFR</i> 761.60(b)(2)(ii)
Disposal of PCB-contaminated articles	Must remove all free-flowing liquid from the Article, disposing of the liquid in compliance with the requirements of 40 <i>CFR</i> 761.60(a)(2) or (a)(3) and	Generation of PCB-contaminated Articles (as defined in 40 <i>CFR</i> 761.3) for disposal— <b>applicable</b>	40 <i>CFR</i> 761.60(b)(6)(ii)
	Dispose by one of the following methods: <ul style="list-style-type: none"> <li>In accordance with the decontamination provisions at 40 <i>CFR</i> 761.79</li> <li>In a facility managed as a municipal solid waste or nonmunicipal nonhazardous waste facility</li> <li>In an industrial furnace operating in compliance with 40 <i>CFR</i> 761.72, or</li> <li>In a disposal facility under 40 <i>CFR</i> 761.60.</li> </ul>	Disposal of PCB-contaminated articles with no free-flowing liquid— <b>applicable</b>	40 <i>CFR</i> 761.60(b)(6)(ii)(A) thru (D)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Transportation of PCB wastes off site for disposal	Must comply with the manifesting provisions at 40 <i>CFR</i> 761.207 through 218.	Preparation for relinquishment of control over PCB wastes by transporting or offering for transport— <b>applicable</b>	40 <i>CFR</i> 761.207(a)
<b>RADIOACTIVE WASTE</b>			
<i>Design, construction, operation and closure of a low-level radioactive waste landfill</i>			
Radiation protection of the public and the environment	Except as provided in 458.1(4)(c), exposure to individual members of the public from radiation shall not exceed a total EDE of 0.1 rem/year (100 mrem/year), an equivalent dose to the lens of the eye exceeding 1,500 mrem/year, or an equivalent dose to the skin or extremities exceeding 5,000 mrem/year, exclusive of the dose contributions from background radiation, any medical administration the individual has received, or voluntary participation in medical/research programs.	Release of radionuclides to the environment from all sources of ionizing radiation and exposure pathways at a DOE facility that could contribute significantly to the total dose— <b>TBC</b>	DOE Order 458.1(4)(b) and (c)
	Shall use, to the extent practicable, procedures and engineering controls based on sound radiation protection principles to achieve doses to members of the public that are ALARA.		DOE Order 458.1(4)(d)
	Must not exceed 3 pCi/L annual average radon-220 and radon-222 concentration, not including background, at the site boundary if DOE activities release radon-220 and radon-222 or their decay products.	DOE activities that release radon-220 and radon-222 or their decay products— <b>TBC</b>	DOE Order 458.1(4)(f)(5)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Radiation protection of the public and the environment (continued)	Except as provided in <i>OAC 3701:1-38-13(C)</i> , exposure to individual members of the public from radiation shall not exceed 1 millisievert (mSv) (0.1 rem) in a year, exclusive of the dose contributions from background radiation, any medical administration the individual has received, or voluntary participation in medical/research programs.	Conducting operations that release radioactivity— <b>relevant and appropriate</b>	<i>OAC 3701:1-38-13(A)(1)</i>
	The dose in any unrestricted area from external sources, exclusive of the dose contribution from patients administered radioactive material and released in accordance with <i>OAC 3701:1-58-30</i> or equivalent U.S. nuclear regulatory agency or agreement state regulations, shall not exceed 0.02 mSv (0.002 rem) in any 1 hour.		<i>OAC 3701:1-38-13(A)(2)</i>
Management, storage and disposal of LLW	Management, storage, and disposal must be conducted in a manner such that exposure to members of the public to radiation from radioactive waste complies with ALARA process requirements and does not exceed a TED of 25 mrem in a year from all exposure pathways and radiation sources associated with the waste, except for transportation and radon and its decay products.	Management, storage, and disposal of low-level radioactive waste— <b>TBC</b>	DOE Order 458.1(h)(1)(c)
Siting of a LLW disposal facility	Proposed locations for low-level waste facilities shall be evaluated considering environmental characteristics, geotechnical characteristics, and human activities, including whether it is located in a floodplain, a tectonically active area, or in a zone of water table fluctuation.	Construction of a LLW disposal facility— <b>TBC</b>	DOE Manual 435.1-1 (IV)(M)(1)(a)(2)
	Proposed locations with environmental and geotechnical characteristics, and human activities for which adequate protection cannot be provided through the facility design shall be deemed unsuitable for location of the facility.		DOE Manual 435.1-1 (IV)(M)(1)(b)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Siting, design, and operation of a DOE LLW disposal facility	Permanent identification marks for disposal excavations and monitoring wells shall be emplaced.		DOE Manual 435.1-1 (IV)(P)(6)(b)
	Release of radon shall be less than an average flux of 20 pCi/m <sup>2</sup> /s (0.74 Bq/m <sup>2</sup> /s) at the surface of the disposal facility. Alternatively, a limit of 0.5 pCi/L (0.0185 Bq/L) of air may be applied at the boundary of the facility.	Operation of a LLW disposal facility at a DOE site— <b>TBC</b>	DOE Manual 435.1-1 (IV)(P)(1)(c)
	Operating procedures must protect the public, workers, and the environment, ensure the security of the facility, minimize subsidence during and after waste placement, achieve long-term stability and minimize the need for long-term active maintenance, and meet the requirements of the closure/postclosure plan.		DOE Manual 435.1-1 (IV)(P)(6)(a)
	Operations shall be conducted so that disposal operations do not have adverse effects on any other disposal unit low-level wastes.		DOE Manual 435.1-1 (IV)(P)(6)(d)
	Operations shall include a process for tracking and documenting low-level waste placement in the facility by generator source.		DOE Manual 435.1-1 (IV)(P)(6)(e)
Environmental monitoring at a LLW disposal facility	The environmental monitoring program shall be designed and operated to include measuring and evaluating releases, migration of radionuclides, disposal unit subsidence, and changes in disposal facility and disposal site parameters which may affect long term performance.	Operation of a LLW disposal facility at a DOE site— <b>TBC</b>	DOE Manual 435.1-1 (IV)(R)(3)(b)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Control and stabilization of uranium-bearing wastes at a DOE site	Control and stabilization features shall be designed to:	Long-term management of uranium and its decay products— <b>TBC</b>	DOE Order 458.1(4)(h)(1)(d)(1)(a)
	<ul style="list-style-type: none"> <li>• Provide to the extent reasonably achievable an effective life of 1,000 years with a minimum of at least 200 years</li> <li>• Limit radon-222 emanation to the atmosphere from the wastes to less than an annual average release rate of 20 pCi/m<sup>2</sup>/s and prevent increase in the annual average radon-222 concentration at or above any location outside the boundary of the contaminated area by more than 0.5 pCi/L.</li> </ul>		DOE Order 458.1(4)(h)(1)(d)(1)(b)
Facility requirements for land disposal of radioactive waste – performance objectives	Land disposal facilities shall be sited, designed, operated, closed, and controlled after closure to provide reasonable assurance that the following performance objectives will be met:	Siting, design, operation and closure of a licensed radioactive waste land disposal facility— <b>relevant and appropriate</b>	OAC 3701:1-54-08(B)
	<ul style="list-style-type: none"> <li>• Concentrations of radioactive material which may be released to the general environment in ground water, surface water, air, soil, plants, or animals must not result in an annual dose exceeding the equivalent of 0.25 mSv (25 mrem) to the whole body, 0.75 mSv (75 mrem) to the thyroid, or 0.25 mSv (25 mrem) to any other organ to any member of the public. Reasonable effort should be made to maintain releases of radioactivity in effluents to the general environment as low as is reasonably achievable.</li> </ul>		OAC 3701:1-54-08(B)(1)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Facility requirements for land disposal of radioactive waste – performance objectives (continued)	<ul style="list-style-type: none"> <li>Disposal facility shall be sited, designed, used, operated, and closed to achieve long-term stability of the disposal site and to eliminate, to the extent practical, the need for ongoing active maintenance of the disposal site after closure so that only surveillance, monitoring, or minor custodial care are required.</li> </ul>		OAC 3701:1-54-08(B)(4)
	<ul style="list-style-type: none"> <li>Shall develop and implement security measures to protect against and to detect unauthorized access to radioactive material or safety and security systems from external as well as internal threats. Shall perform periodic inspections to ensure all radioactive material is accounted for and that safety and security systems are operating as designed. Shall report any deficiency involving the radioactive material inventory or a safety and security system.</li> </ul>		OAC 3701:1-54-08(B)(5)
	<ul style="list-style-type: none"> <li>Radioactive waste and its containers shall be protected from adverse environmental conditions including, but not limited to, temperature changes that could compromise the isolation of the waste from the biosphere.</li> </ul>		OAC 3701:1-54-08(B)(6)
	<ul style="list-style-type: none"> <li>Shall use standard engineering designs and procedural practices to maintain doses to people, and radionuclide releases to environment, as low as reasonably achievable.</li> </ul>		OAC 3701:1-54-08(B)(7)
Facility requirements for land disposal of radioactive waste – operational requirements	The operation of the disposal facility shall incorporate the following items:	Operation of a licensed radioactive waste land disposal facility— <b>relevant and appropriate</b>	OAC 3701:1-54-08(C)
	<ul style="list-style-type: none"> <li>Waste shall be packaged in appropriate containers for disposal when applicable. Wastes shall be emplaced in a manner that maintains the package integrity during emplacement, minimizes void spaces between packages, and permits the void spaces to be filled.</li> </ul>		OAC 3701:1-54-08(C)(4)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Facility requirements for land disposal of radioactive waste – operational requirements (continued)	<ul style="list-style-type: none"> <li>Void spaces between packages shall be filled as needed to reduce future subsidence within the fill.</li> </ul>		OAC 3701:1-54-08(C)(5)
	<ul style="list-style-type: none"> <li>Boundaries and locations of each disposal unit shall be accurately located and mapped by means of a land survey. Disposal units shall be marked in such a way that boundaries of each unit can be easily defined. Three permanent survey marker control points shall be established on the site to facilitate surveys.</li> </ul>		OAC 3701:1-54-08(C)(7)
	<ul style="list-style-type: none"> <li>A buffer zone of land shall be maintained between any disposed waste and the disposal site boundary and beneath the disposed waste. Buffer zone shall be of adequate dimensions to carry out environmental monitoring activities specified in OAC 3701:1-54-09(E) and to take mitigative measures if needed.</li> </ul>		OAC 3701:1-54-08(C)(8)
	<ul style="list-style-type: none"> <li>Closure and stabilization measures as set forth in the approved site closure plan shall be carried out as each disposal unit is filled and covered.</li> </ul>		OAC 3701:1-54-08(C)(9)
	<ul style="list-style-type: none"> <li>Active waste disposal operations shall not have an adverse effect on completed closure and stabilization measures.</li> </ul>		OAC 3701:1-54-08(C)(10)
Land disposal of radioactive waste – site selection, design, and environmental assessment	The primary emphasis in disposal site suitability is given to isolation of wastes and to disposal site features that ensure that the long-term performance objectives are met. Suitable disposal site features shall include:	Siting and design of a licensed radioactive waste land disposal facility— <b>relevant and appropriate</b>	OAC 3701:1-54-09(A)(1)
	<ul style="list-style-type: none"> <li>Shall be capable of being characterized, modeled, analyzed and monitored.</li> </ul>		OAC 3701:1-54-09(A)(1)(a)
	<ul style="list-style-type: none"> <li>Areas shall be avoided having known natural resources that, if exploited, could result in failure to meet the performance objectives.</li> </ul>		OAC 3701:1-54-09(A)(1)(c)



**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Land disposal of radioactive waste – site selection, design, and environmental assessment (continued)	<ul style="list-style-type: none"> <li>Site shall be generally well drained and free of areas of flooding or frequent ponding; shall not be located in a 100-year flood plain, coastal high-hazard area, or wetland, as defined in Federal Executive Order 11988, “Floodplain Management Guidelines,” and shall be designed and constructed to be outside the 500-year floodplain.</li> </ul>		OAC 3701:1-54-09(A)(1)(d)
	<ul style="list-style-type: none"> <li>Upstream drainage areas shall be minimized to decrease the amount of runoff that could erode or inundate waste disposal units.</li> </ul>		OAC 3701:1-54-09(A)(1)(e)
	<ul style="list-style-type: none"> <li>Site shall provide sufficient depth to the water table that ground water intrusion, perennial or otherwise, into the waste will not occur.</li> </ul>		OAC 3701:1-54-09(A)(1)(f)
	<ul style="list-style-type: none"> <li>The hydrogeologic unit used for disposal shall not discharge groundwater to the surface within the disposal site. The soil or rock layers immediately beneath the facility, but above the water table shall have good vertical drainage or be engineered to have good drainage to prevent water from ponding around the base of the facility. The shallowest hydrogeologic unit beneath the facility shall not discharge perennially to the site.</li> </ul>		OAC 3701:1-54-09(A)(1)(g)
	<ul style="list-style-type: none"> <li>Areas shall be avoided where tectonic processes such as faulting, folding, seismic activity, or vulcanization may occur with such frequency and extent that it may significantly affect the ability of the disposal site to meet the performance objectives of this rule or may preclude defensible modeling and prediction of long-term impacts.</li> </ul>		OAC 3701:1-54-09(A)(1)(h)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Land disposal of radioactive waste – site selection, design, and environmental assessment (continued)	<ul style="list-style-type: none"> <li>Areas should be avoided where surface geologic processes such as mass wasting, erosion, slumping, landsliding, or weathering occur with such frequency and extent that it may significantly affect the ability of the disposal site to meet the performance objectives of this rule, or may preclude defensible modeling and prediction of long-term impacts.</li> </ul>		OAC 3701:1-54-09(A)(1)(i)
	<ul style="list-style-type: none"> <li>Site must not be located where nearby facilities or activities could affect the ability of the site to meet the performance objectives or mask the environmental monitoring program.</li> </ul>		OAC 3701:1-54-09(A)(1)(j)
<b><i>Radioactive generation, characterization, and segregation</i></b>			
Characterization of LLW	Shall be characterized using direct or indirect methods and the characterization documented in sufficient detail to ensure safe management and compliance with the WAC of the receiving facility.	Generation of LLW for storage or disposal at a DOE facility— <b>TBC</b>	DOE Manual 435.1-1(IV)(I)
	Characterization data shall, at a minimum, include the following information relevant to the management of the waste:		DOE Manual 435.1-1(IV)(I)(2)
	<ul style="list-style-type: none"> <li>Physical and chemical characteristics</li> </ul>		DOE Manual 435.1-1(IV)(2)(a)
	<ul style="list-style-type: none"> <li>Volume, including the waste and any stabilization or absorbent media</li> </ul>		DOE Manual 435.1-1(IV)(I)(2)(b)
	<ul style="list-style-type: none"> <li>Weight of the container and contents</li> </ul>		DOE Manual 435.1-1(IV)(I)(2)(c)
	<ul style="list-style-type: none"> <li>Identities, activities, and concentrations of major radionuclides</li> </ul>		DOE Manual 435.1-1(IV)(I)(2)(d)
	<ul style="list-style-type: none"> <li>Characterization date</li> </ul>		DOE Manual 435.1-1(IV)(I)(2)(e)
	<ul style="list-style-type: none"> <li>Generating source</li> </ul>		DOE Manual 435.1-1(IV)(I)(2)(f)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Characterization of LLW (continued)	<ul style="list-style-type: none"> <li>Any other information which may be needed to prepare and maintain the disposal facility performance assessment, or demonstrate compliance with performance objectives.</li> </ul>		DOE Manual 435.1-1(IV)(I)(2)(g)
Decontamination of radioactively contaminated equipment and building structures	Property potentially containing residual radioactive material must not be released or cleared from DOE control unless it is either demonstrated not to contain residual radioactive material based on process and historical knowledge, radiological monitoring or surveys, or a combination of these; or the property is evaluated and appropriately monitored or surveyed in accordance with DOE Order 458.1(4)(k)(3)(b).	Residual radioactive material on equipment and building structures for unrestricted use— <b>TBC</b>	DOE Order 458.1(4)(k)(3)
Release of radiological materials or scrap metal for recycle or reuse	<p>Before being released, property shall be monitored or surveyed to determine the types and quantities of residual radioactive material within the property; the quantities of removable and total residual radioactive material on property surfaces (including residual radioactive material on or under any coating); and that contamination within or on the property is in compliance with applicable DOE Authorized Limits of DOE Order 458.1(4)(k)(6).</p> <p>Where potentially contaminated surfaces are difficult to access for measurement (as in some pipes, drains, and ductwork), such property may be released after case-by-case evaluation and documentation based on both the history of its use and available measurements sufficient to demonstrate that the unsurveyable surfaces are likely to meet DOE Authorized Limits.</p>	Radionuclide-contaminated materials and equipment intended for recycle or reuse— <b>TBC</b>	<p>DOE Order 458.1(4)(k)(3)(b)(1)–(2) and (4)</p> <p>DOE Order 458.1(4)(k)(3)(b)(3)</p>
<b>Radioactive storage</b>			
Preparation of solid LLW for storage	Shall be packaged in a manner that provides containment and protection for the duration of the anticipated storage period and until disposal is achieved or until waste has been removed from container.	Management and storage of LLW in containers at a DOE facility— <b>TBC</b>	DOE Manual 435.1-1 IV.L(1)(a)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Preparation of solid LLW for storage (continued)	Vents or other measures shall be provided if the potential exists for pressurizing or generating flammable or explosive concentrations of gases within the waste container. Containers shall be marked such that their contents can be identified.		DOE Manual 435.1-1 IV.L(1)(b) and (c)
Temporary staging and storage of LLW	Shall not be readily capable of detonation, explosive decomposition, reaction at anticipated pressures and temperatures, or explosive reaction with water.	Management and storage of LLW at a DOE facility— <b>TBC</b>	DOE Manual 435.1-1 IV.N(1)
	Shall be stored in a location and manner that protects the integrity of waste for the expected time of storage.		DOE Manual 435.1-1 IV.N(3)
	Staging of LLW shall be for the purpose of accumulation of such quantities of waste as necessary to facilitate transportation, treatment, and disposal.		DOE Manual 435.1-1 IV.N(7)
<b><i>Radioactive waste treatment/disposal</i></b>			
Treatment of LLW	Waste treatment to provide more stable waste forms and to improve the long-term performance of a LLW disposal facility shall be implemented as necessary to meet performance objectives of the disposal facility.	Generation of LLW for disposal at a DOE LLW facility— <b>TBC</b>	DOE Manual 435.1-1 IV.O
Treatment of uranium-bearing LLW	Such wastes shall be properly conditioned so that the generation and escape of biogenic gases will not cause the emission or dose limits in paragraph 4.h.(1) of DOE Order 458.1 to be exceeded and that biodegradation within the facility will not result in premature structural failure.	Placement of potentially biodegradable contaminated wastes in a long-term management facility— <b>TBC</b>	DOE Order 458.1(h)(1)(d)(3)
Disposal of LLW in a landfill	Waste placement into disposal units shall minimize voids between containers with the voids filled to the extent practicable. Uncontainerized bulk waste shall be placed to minimize voids and subsidence.	Operation of a LLW disposal facility at a DOE site— <b>TBC</b>	DOE Manual 435.1-1 (IV)(P)(6)(c)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Disposal of LLW in a landfill (continued)	Void spaces within the waste and, if containers are used, between the waste and its container shall be reduced to the extent practical.		DOE Manual 435.1-1 (IV)(G)(1)(d)(1)
Land disposal of radioactive waste – waste classification and characteristics	The following waste characteristics are minimum requirements for all classes of waste and are intended to facilitate handling at the disposal site and provide protection of health and safety of personnel at the disposal site.	Land disposal of radioactive waste in a licensed radioactive waste landfill— <b>relevant and appropriate</b>	OAC 3701:1-54-10(B)
	Waste must not be packaged for disposal in cardboard or fiberboard boxes.		OAC 3701:1-54-10(B)(1)
	Liquid waste must be solidified or packaged in sufficient absorbent material to absorb twice the volume of the liquid.		OAC 3701:1-54-10(B)(2)
	Solid waste containing liquid shall contain as little free standing and noncorrosive liquid as is reasonably achievable, but in no case shall the liquid exceed 1% of the volume.		OAC 3701:1-54-10(B)(3)
	Waste must not be readily capable of detonation or of explosive decomposition or reaction at normal pressures and temperatures, or of explosive reaction with water.		OAC 3701:1-54-10(B)(4)
	Waste must not contain or be capable of generating quantities of toxic gases, vapors, or fumes harmful to persons transporting, handling, or disposing of the waste. This does not apply to radioactive gaseous waste packaged in accordance with paragraph (B)(7) of this rule.		OAC 3701:1-54-10(B)(5)
	Waste must not be pyrophoric. Pyrophoric materials contained in waste shall be treated, prepared, and packaged to be nonflammable.		OAC 3701:1-54-10(B)(6)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Land disposal of radioactive waste – waste classification and characteristics (continued)	The requirements in this rule are intended to provide stability of the waste. Stability is intended to ensure that the waste does not structurally degrade and affect overall stability of the site through slumping, collapse, or other failure of the disposal unit and thereby lead to water infiltration. Stability is also a factor in limiting exposure to an inadvertent intruder, since it provides a recognizable and nondispersible waste.		OAC 3701:1-54-10(B)(9)
	<ul style="list-style-type: none"> <li>Waste must have structural stability. A structurally stable waste form will generally maintain its physical dimensions and its form, under the expected disposal conditions such as weight of overburden and compaction equipment, presence of moisture, and microbial activity, and internal factors such as radiation effects and chemical changes. Structural stability can be provided by the waste form itself, processing the waste to a stable form, or placing the waste in a disposal container or structure that provides stability after disposal.</li> </ul>		OAC 3701:1-54-10(B)(9)(a)
	<ul style="list-style-type: none"> <li>Notwithstanding provisions in OAC 3701:1-54-10 (B)(2) and (3), liquid wastes, or wastes containing liquid, must be converted into a form that contains as little free standing and noncorrosive liquid as is reasonably achievable, but in no case shall the liquid exceed 1% of the volume of the waste when the waste is in a disposal container designed to ensure stability, or 0.5% of the volume of the waste for waste processed to a stable form.</li> </ul>		OAC 3701:1-54-10(B)(9)(b)
Disposal of solid LLW at DOE facilities	Shall meet waste acceptance requirements before it is transferred to the receiving facility.	Generation of LLW for disposal at a DOE facility— <b>TBC</b>	DOE Manual 435.1-1 (IV)(J)(2)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Transportation of radioactive waste off site for disposal	Shall be packed and transported in accordance with the substantive requirements of DOE Order 460.1C ( <i>Packaging and Transportation Safety</i> ) and DOE Order 460.2A ( <i>Departmental Materials Transportation and Packaging Management</i> ).	Preparation of shipment of radioactive waste— <b>TBC</b>	DOE Manual 435.1-1 (I)(1)(E)(11)
	To the extent practicable, the volume of waste and number of shipments shall be minimized.		DOE Manual 435.1-1 (III)(L)(2)
			DOE Manual 435.1-1 (IV)(L)(2)
<b>ASBESTOS-CONTAINING WASTE</b>			
<i>Operation and closure of an asbestos-containing waste disposal site</i>			
Operation of an active ACM waste disposal site	Shall cause or permit no visible emissions to the outside air; or shall comply with the requirements of OAC 3745-20-06(B) [as noted below].	Operation of an active waste disposal site that receives ACM— <b>applicable</b>	OAC 3745-20-06(A)
	Shall be no visible emissions to the outside air from ACM during the on-site transportation, transfer, deposition, or compacting operations.		OAC 3745-20-06(B)(1)
	Deposition and burial operations shall be conducted in a manner which prevents handling by equipment or persons that causes asbestos-containing waste materials to be broken up or dispersed before the materials are buried.		OAC 3745-20-06(B)(2)
	As soon as practicable after deposition of the ACM but no later than at the end of each operating day, the ACM deposited during the operating day shall be covered with at least 12 in. of compacted nonasbestos-containing material. Alternatively, may apply for approval to utilize alternative control methods to bind dust, control wind erosion or convert asbestos to nonfriable forms.		OAC 3745-20-06(B)(3)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

Media/Location/Action <sup>a</sup>	Requirements <sup>b</sup>	Prerequisite	Citation
Operation of an active ACM waste disposal site (continued)	During the unloading, deposition, burial, and initial compaction of ACM, must establish a restricted area adequate to deter the unauthorized entry of the general public and any unauthorized personnel from any location within 100 ft of the operations; and		OAC 3745-20-06(B)(4)
	Shall display a sign not less than 20 ×14 in. so that it is visible at all entrances and at intervals of 300 ft or less along the property line or the fencing immediately surrounding the restricted area using wording, letter sizes, and styles in accordance with specifications listed in OAC 3745-20-06(B)(5).		OAC 3745-20-06(B)(5)
Inventory requirements	Maintain until closure records of the location, depth and area, and quantity in cubic yards of asbestos-containing waste material within the disposal site on a map or diagram.	Operation of an active waste disposal site that receives ACM— <b>applicable</b>	40 CFR 61.154(f) OAC 3745-20-06(C)(2)
Closure of an asbestos-containing waste disposal site	Upon closure, meet the following requirements: <ul style="list-style-type: none"> <li>• Either discharge no visible emissions to the outside air or</li> <li>• Cover the waste material with at least 15 cm (6 in.) of compacted nonasbestos-containing material and grow and maintain a vegetative cover on the area adequate to prevent exposure of ACM or</li> <li>• Cover the waste material with at least 60 cm (2 ft) of compacted nonasbestos-containing material, and maintain it to prevent exposure of the asbestos-containing waste</li> <li>• Unless a natural barrier adequately deters access by the general public, install and maintain warning signs and fencing as detailed in 40 CFR 61.151(b)(1) – (3)</li> </ul>	Closure of an active asbestos-containing waste disposal site— <b>applicable</b>	40 CFR 61.154(g) – (h) OAC 3745-20-06(E) 40 CFR 61.151(a)(1) OAC 3745-20-07(A)(1)  40 CFR 61.151(a)(2) OAC 3745-20-07(A)(2)   40 CFR 61.151(a)(3) OAC 3745-20-07(A)(3)   40 CFR 61.151(b) OAC 3745-20-07(B)



**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

Media/Location/Action <sup>a</sup>	Requirements <sup>b</sup>	Prerequisite	Citation
Closure of an asbestos-containing waste disposal site (continued)	<ul style="list-style-type: none"> <li>Owner may use an alternative method of controlling the asbestos that has received prior approval of the Administrator rather than comply with the requirements of 40 <i>CFR</i> 61.151(a) or (b).</li> </ul> <p><i>NOTE:</i> Approval would be granted through the DFF&amp;O document approval process and included in the appropriate DFF&amp;O document.</p>		40 <i>CFR</i> 61.151(c) <i>OAC</i> 3745-20-07(C)
<b><i>Asbestos-containing waste treatment and disposal</i></b>			
Management of ACM prior to disposal	Discharge no visible emissions to the outside air, or use one of the emission control and waste treatment methods specified in Paragraphs (a)(1) through (a)(4) of 40 <i>CFR</i> 61.150 [Paragraphs (B)(1) through (B)(4) of <i>OAC</i> 3745-20-05].	Generation, collection, processing, packaging, and transporting of any ACM that is not Category I or II nonfriable ACM waste that did not become crumbled, pulverized, or reduced to powder [40 <i>CFR</i> 61.150(a)(5)]— <b>applicable</b>	40 <i>CFR</i> 61.150(a) <i>OAC</i> 3745-20-05(B)
Disposal of asbestos-containing waste material (e.g., transite siding, pipe lagging, insulation, ceiling tiles)	<p>All asbestos-containing waste material must be adequately wetted, collected, sealed in leak-proof containers, and deposited as soon as practicable at an approved waste disposal site operated in accordance with Section 61.154 [<i>OAC</i> 3745-20-06] or a site that converts RACM and asbestos-containing waste material into nonasbestos (asbestos-free) material according to provisions of 40 <i>CFR</i> 61.155 [<i>OAC</i> 3745-20-13].</p> <p>The requirements of 40 <i>CFR</i> 61.150(b)(1) and (2) [<i>OAC</i> 3745-20-05(A)] do not apply to Category I nonfriable ACM that is not RACM.</p>	Removal and disposal of RACM, except Category I nonfriable asbestos-containing material— <b>applicable</b>	<p>40 <i>CFR</i> 61.150(b)(1) - (2) <i>OAC</i> 3745-20-05(A)</p> <p>40 <i>CFR</i> 61.150(b)(3) <i>OAC</i> 3745-20-05(A)(4)</p>

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Disposal of asbestos-containing waste material (e.g., transite siding, pipe lagging, insulation, ceiling tiles) (continued)	May use an alternative emission control and waste treatment method that will control asbestos emissions equivalent to currently required methods, if the alternative method is suitable for the intended application, and the alternative method will not violate other regulations and will not result in increased water or land pollution or occupational hazards.		40 <i>CFR</i> 61.150(a)(4) <i>OAC</i> 3745-20-05(B)(4)
Transportation of asbestos-containing waste materials off site for disposal	For asbestos-containing waste material to be transported off the facility site, label containers or wrapped materials with the name of the waste generator and location at which the waste was generated.  Mark vehicles used to transport asbestos-containing waste material during the loading and unloading of waste so that the signs are visible. The markings must conform to the requirements of 40 <i>CFR</i> 61.149(d)(1)(i), (ii), and (iii).	Preparation of asbestos-containing waste materials for off-site transport— <b>applicable</b>	40 <i>CFR</i> 61.150(a)(1)(v) <i>OAC</i> 3745-20-05(C)(1)  40 <i>CFR</i> 61.150(c) <i>OAC</i> 3745-20-05(E)
<b>UNIVERSAL WASTES</b>			
<i>Characterization and management</i>			
Characterization and management of universal waste	Must manage universal waste in accordance with 40 <i>CFR</i> 273 [ <i>OAC</i> 3745-273-33] in a way that prevents releases of any universal waste or component of a universal waste to the environment.  Must label or mark the universal waste to identify the type of universal waste.  May accumulate waste for no longer than 1 year from the date the waste is generated or received from another handler unless the requirements of 40 <i>CFR</i> 273.35(b) [ <i>OAC</i> 3745-273-35(B)] are met.	Generation of universal waste [as defined in 40 <i>CFR</i> 273 and <i>OAC</i> 3745-273] for disposal— <b>applicable</b>	40 <i>CFR</i> 273.33 <i>OAC</i> 3745-273-33(A)  40 <i>CFR</i> 273.34 <i>OAC</i> 3745-273-34  40 <i>CFR</i> 273.35(a) <i>OAC</i> 3745-273-35(A)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Characterization and management of universal waste (continued)	May accumulate universal waste for longer than 1 year from the date the waste is generated or received from another handler if such activity is solely for the purpose of accumulation of such quantities of universal waste as necessary to facilitate proper recovery, treatment, or disposal. However, the handler bears the burden of proving that such activity was solely for this purpose.		40 <i>CFR</i> 273.35(b) <i>OAC</i> 3745-273-35(B)
	Shall ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures relative to their responsibilities during normal facility operations and emergencies.		40 <i>CFR</i> 273.36 <i>OAC</i> 3745-273-36
	Must immediately contain all releases of universal wastes and other residues from universal wastes, and must determine whether any material resulting from the release is hazardous waste, and if so, must manage the hazardous waste in compliance with all applicable requirements.		40 <i>CFR</i> 273.37 <i>OAC</i> 3745-273-37
<b>Transportation</b>			
Transportation of universal waste off site	Off-site shipments of universal waste by a large quantity handler of universal waste shall be made in accordance with 40 <i>CFR</i> 273.38 [ <i>OAC</i> 3745-273-38].	Preparation of universal waste for off-site transport— <b>applicable</b>	40 <i>CFR</i> 273.38(c) <i>OAC</i> 3745-273-38(C)
	Must keep a record of each shipment of universal waste received and sent from the facility and retain record for at least 3 years. Record must include waste handler, shipper, or destination facility name and address, quantity and type of waste, and date shipment left or was received at facility.		40 <i>CFR</i> 273.39 <i>OAC</i> 3745-273.39

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Transportation of universal waste off site (continued)	Off-site shipments to a foreign destination must comply with requirements applicable to a primary exporter in <i>OAC</i> 3745-52-10, 3745-52-53, 3745-52-56 and 3745-52-57 and export waste only upon consent of the receiving country and in conformance with the EPA “Acknowledgement of Consent” as defined in <i>OAC</i> 3745-52-50 to 3745-52-57. A copy of the consent must be provided to the transporter.		40 <i>CFR</i> 273.40 <i>OAC</i> 3745-273.40
<b>Batteries</b>			
Management of universal waste batteries	<p>A large quantity handler of universal waste must contain any universal waste battery that shows evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions in a container.</p> <p>Container must be closed, structurally sound, compatible with the contents of the battery, and lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions.</p> <p>Batteries, or container or tank in which the batteries are contained, must be labeled or marked clearly with any one of the following phrases: “Universal Waste – Battery(ies)” or “Waste Batter(ies)” or “Used Battery(ies).”</p>	<p>Generation of universal waste batteries [as defined in 40 <i>CFR</i> 273.9 and <i>OAC</i> 3745-273-02] —applicable</p>	<p>40 <i>CFR</i> 273.33(a)(1) <i>OAC</i> 3745-273-33(A)(1)</p> <p>40 <i>CFR</i> 273.34(a) <i>OAC</i> 3745-273-34(A)</p>
<b>Pesticides</b>			
Management of universal waste pesticides	A large quantity handler of universal waste pesticide must contain the pesticide in a container that remains closed, structurally sound, compatible with the pesticide, and that lacks evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. A leaking pesticide container must be put into an overpack container, tank, or transport container, as detailed in 40 <i>CFR</i> 273.33(b) [ <i>OAC</i> 3745-273-33(B)].	<p>Generation of universal waste pesticides [as defined in 40 <i>CFR</i> 273.9 and <i>OAC</i> 3745-273-03] —applicable</p>	<p>40 <i>CFR</i> 273.33(b) <i>OAC</i> 3745-273-33(B)(1) – (4)</p>

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Management of universal waste pesticides (continued)	A container, tank, transport vehicle or vessel in which recalled or unused pesticides are contained must be labeled or marked clearly with the label that was on or accompanied the product and the word “Universal Waste – Pesticide(s)” or “Waste – Pesticide(s).”		40 <i>CFR</i> 273.34(b) and (c) <i>OAC</i> 3745-273-34(B) and (C)
<b><i>Thermostats and other mercury-containing equipment</i></b>			
Management of universal waste thermostats or other mercury-containing equipment	<p>A large quantity handler of universal waste must contain any mercury-containing equipment that shows evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions in a container.</p> <p>Container must be closed, structurally sound, compatible with the contents of the thermostat, and lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions, and be reasonably designed to prevent the escape of mercury into the environment by volatilization or any other means.</p> <p>May remove the mercury-containing ampule or the open original housing holding the mercury from mercury-containing equipment and manage and dispose of it in accordance with regulations.</p> <p>Mercury-containing equipment or a container in which the equipment is contained must be labeled or marked clearly with any of the following phrases: “Universal Waste – Mercury-Containing Equipment” or Waste Mercury-Containing Equipment” or “Used Mercury-Containing Equipment.”</p>	<p>Generation of universal waste mercury-containing equipment [as defined in 40 <i>CFR</i> 273.9 and <i>OAC</i> 3745-273-04] —<b>applicable</b></p>	<p>40 <i>CFR</i> 273.33(c)(1) <i>OAC</i> 3745-273-33(C)(1)</p> <p>40 <i>CFR</i> 273.33(c)(2) – (4) <i>OAC</i> 3745-273-33 (C)(2) – (4)</p> <p>40 <i>CFR</i> 273.34(d)(1) <i>OAC</i> 3745-273-34(D)(1)</p>

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Management of universal waste thermostats or other mercury-containing equipment (continued)	Mercury-containing thermostats or containers containing only these thermostats must be labeled or marked clearly with any of the following phrases: “Universal Waste – Mercury Thermostat(s)” or “Waste Mercury Thermostat(s)” or “Used Mercury Thermostat(s).”		40 <i>CFR</i> 273.34(d)(2) <i>OAC</i> 3745-273-34(D)(2)
<b><i>Fluorescent and mercury vapor lamps</i></b>			
Management of universal waste lamps (fluorescent, mercury vapor)	A large quantity handler of universal waste lamps must contain any lamp in containers or packages that are structurally sound, adequate to prevent breakage, and compatible with the contents of the lamps.  Such containers and packages must remain closed and must lack evidence of leakage, spillage, or damage that could cause leakage of hazardous constituents under reasonably foreseeable conditions.	Generation of universal waste lamps [as defined in 40 <i>CFR</i> 273.9 and <i>OAC</i> 3745-273-05] — <b>applicable</b>	40 <i>CFR</i> 273.33(d)(1) <i>OAC</i> 3745-273-33(D)(1)
	A large quantity handler of universal waste lamps must immediately clean up and place in a container any lamp that is broken and must place in a container any lamp that shows evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous constituents to the environment.		40 <i>CFR</i> 273.33(d)(2) <i>OAC</i> 3745-273-33(D)(2)
	Each lamp or container or package in which such lamps are contained must be labeled or marked clearly with one of the following phrases: “Universal Waste-Lamp(s),” or “Waste Lamps,” or “Used Lamps.”		40 <i>CFR</i> 273.34(e) <i>OAC</i> 3745-273-34(E)
	Mark or label the individual item with the date the lamp(s) became a waste, or mark or label the container or package with the date the wastes were received.		40 <i>CFR</i> 273.35(c) <i>OAC</i> 3745-273-35(C)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

Media/Location/Action <sup>a</sup>	Requirements <sup>b</sup>	Prerequisite	Citation
<b>MISCELLANEOUS WASTES</b>			
<i>State of Ohio Construction-Demolition Debris</i>			
Exclusions for disposal or reuse of construction and demolition debris, or “clean hard fill” [as defined in <i>OAC 3745-400-01(E)</i> ]	Construction and demolition debris facility requirements do not apply to construction and demolition debris or clean hard fill used in one or more of the following ways:	Use of construction and demolition debris or clean hard fill at a site— <b>applicable</b>	<i>OAC 3745-400-03</i>
	<ul style="list-style-type: none"> <li>Any construction site where construction debris and trees and brush removed in clearing the construction site are used as fill material on the site where the materials are generated or removed</li> </ul>		<i>OAC 3745-400-03(A)</i>
	<ul style="list-style-type: none"> <li>Any site where clean hard fill is used, either alone or in conjunction with clean soil, sand, gravel, or other clean aggregates, in legitimate fill operations</li> </ul>		<i>OAC 3745-400-03(B)</i>
	<ul style="list-style-type: none"> <li>Any site where debris is not disposed, such as where debris is reused or recycled in a beneficial manner, or stored for a temporary period remaining unchanged and retrievable.</li> </ul>		<i>OAC 3745-400-03(C)</i>
Disposal of construction and demolition debris	Shall be disposed of only in an authorized construction and demolition debris facility or solid waste disposal facility; by means of open burning if permitted as provided in <i>OAC 3745-19</i> ; or by other methods provided such methods are demonstrated to be capable of disposing without creating a nuisance or health hazard, without causing water pollution, and without violating any regulations under Chapters 3745, 3704 or 3734.	Disposal of construction and demolition debris— <b>applicable</b>	<i>OAC 3745-400-04(A)</i> and (B)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Disposal of construction and demolition debris as “clean hard fill”	<p>Clean hard fill (does not include materials contaminated with hazardous, solid, or infectious waste) consisting of reinforced or nonreinforced concrete, asphalt concrete, brick (includes but is not limited to refractory brick and mortar), block, tile, or stone shall be managed in one or more of the following ways:</p> <ul style="list-style-type: none"> <li>Recycled into usable construction material</li> <li>Disposed in licensed construction and demolition debris or other waste facilities</li> <li>Used in legitimate fill operations for construction purposes or to bring the site up to consistent grade, on the site of generation, or on a site other than the site of generation, pursuant to Paragraph (C) of <i>OAC 3745-400-05</i>.</li> </ul> <p>Clean hard fill may be stored for a period of less than 2 years. “Stored” means held in a manner remaining retrievable and substantially unchanged. Clean hard fill piled adjacent to a construction materials processing facility shall not be considered stored for more than 2 years if the pile is active, i.e., if clean hard fill material is added to and removed from the pile within a 2-year period.</p>	Use of clean hard fill to bring a construction site up to consistent grade— <b>applicable</b>	<p><i>OAC 3745-400-05(A)</i></p> <p><i>OAC 3745-400-05(B)</i></p>
<b><i>Beryllium wastes</i></b>			
Release of beryllium-contaminated equipment or other items	Must clean beryllium-contaminated equipment or other items to the lowest contamination level practicable, not to exceed the levels established in 10 <i>CFR</i> 850.31(b) and (c) and label them before release.	Release of beryllium-contaminated equipment or other items to general public or another DOE facility— <b>applicable</b>	10 <i>CFR</i> 850.31(a)



**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Release of beryllium-contaminated equipment or other items (continued)	Before being released to the general public or another DOE facility, ensure that the removable contamination level of equipment and item surfaces does not exceed the higher of 0.2 µg/100 cm <sup>2</sup> or the concentration level of beryllium in soil at the point of release, whichever is greater;		10 <i>CFR</i> 850.31(b)(1)
	Ensure equipment or item is labeled in accordance with 10 <i>CFR</i> 850.38(b); and		10 <i>CFR</i> 850.31(b)(2)
	Release is conditioned on the recipient's commitment to implement controls that will prevent foreseeable beryllium exposure.		10 <i>CFR</i> 850.31(b)(3)
	Before being released to another facility performing work with beryllium, must ensure that removal contamination level of equipment and other item surfaces does not exceed 3 µg/100 cm <sup>2</sup> ;	Release of beryllium-contaminated equipment or other items to another facility performing work with beryllium— <b>applicable</b>	10 <i>CFR</i> 850.31(c)(1)
	Ensure equipment or item is labeled in accordance with 10 <i>CFR</i> 850.38(b); and		10 <i>CFR</i> 850.31(c)(2)
	Enclose or place in sealed, impermeable bags or containers to prevent the release of beryllium dust during handling or transportation.		10 <i>CFR</i> 850.31(c)(3)
Disposal of beryllium-containing waste or beryllium-contaminated equipment and other items	Must control the generation of beryllium-containing waste or beryllium-contaminated equipment and other items through the application of waste minimization principles.	Generation of beryllium-containing waste or beryllium-contaminated equipment and other items— <b>applicable</b>	10 <i>CFR</i> 850.32(a)
	Dispose of in sealed, impermeable bags, containers, or enclosures to prevent the release of beryllium dust during handling and transportation. Bags, containers, and enclosures must be labeled according to 10 <i>CFR</i> 850.38.		10 <i>CFR</i> 850.32(b)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site  
Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

Media/Location/Action <sup>a</sup>	Requirements <sup>b</sup>	Prerequisite	Citation
<i>Used oil</i>			
Management of used oil	Used oil shall not be stored in a unit other than a tank, container, or RCRA regulated unit.	Generation and storage of used oil, as defined in 40 <i>CFR</i> 279.1 [OAC 3745-279-01(A)(12)], that meets the applicability requirements of 40 <i>CFR</i> 279.10— <b>applicable</b>	40 <i>CFR</i> 279.22(a) OAC 3745-279-22(A)
	Containers and aboveground tanks used to store used oil must be in good condition (no severe rusting, apparent structural defects, or deterioration); and not leaking (no visible leaks).		40 <i>CFR</i> 279.22(b)(1) and (2) OAC 3745-279-22(B)(1) and (2)
	Containers and aboveground tanks used to store used oil and fill pipes used to transfer used oil into USTs must be labeled or marked clearly with the words “Used Oil.”		40 <i>CFR</i> 279.22(c)(1) and (2) OAC 3745-279-22(C)(1)
	Upon detection of a release of used oil to the environment, a generator must stop the release; contain, clean up, and properly manage the released used oil; and, if necessary, repair or replace any leaking used oil storage containers or tanks prior to returning them to service.	Release of used oil to the environment— <b>applicable</b>	40 <i>CFR</i> 279.22(d) OAC 3745-279-22(D)
Disposal of hazardous used oil	Used oils that are identified as a hazardous waste and cannot be recycled in accordance with OAC 3745-279 must be managed in accordance with the hazardous waste management requirements of OAC 3745-50 to 3745-69, 3745-205, 3745-256, 3745-266, and 3745-270.	Generation of used oil— <b>applicable</b>	40 <i>CFR</i> 279.81(a) OAC 3745-279-81(A)
Disposal of nonhazardous used oils	Used oils that are not hazardous wastes and cannot be recycled under OAC 3745-279 must be disposed in accordance with the applicable requirements of OAC 3745-27, 3745-28, 3745-29, and 3745-30.		40 <i>CFR</i> 279.81(b) OAC 3745-279-81(B)

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**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

Media/Location/Action <sup>a</sup>	Requirements <sup>b</sup>	Prerequisite	Citation
<b>WATER DISCHARGES</b>			
<i>Water treatment and discharges (e.g., leachate, stormwater, decon water)</i>			
Activities causing storm water runoff	Dischargers must utilize best management practices to control pollutants in storm water discharges during and after construction, which may include, as appropriate, soil stabilization practices (e.g., seeding); perimeter structural practices (e.g., gabions, silt fences, sediment traps); and storm water management devices as detailed in Part III.G.2 (“Controls”) of NPDES OHC000003.	Storm water runoff discharges from land disturbed by construction activity—disturbance of $\geq 1$ acre total, except where otherwise exempt as specified in 40 <i>CFR</i> 122.26(b)(15)— <b>applicable</b>	Authorization for Storm Water Discharges Associated with Construction Activity under NPDES OHC000003, Part III.G.2
Release of wastewater from a new hazardous waste landfill through a new point source	Except as provided in 40 <i>CFR</i> 445.1, discharges of wastewater from a new RCRA hazardous waste landfill must comply with the performance standards for new sources, which are the same as the maximum daily and maximum monthly average effluent limitations listed in 40 <i>CFR</i> 445.11.	Release of water from a new hazardous waste landfill through a new discharge point source— <b>applicable</b>	40 <i>CFR</i> 445.14
Disposal of wastewaters containing RCRA hazardous constituents in a CWA WWTU	Disposal is not prohibited if the wastes are managed in a treatment system which subsequently discharges to waters of the United States under the CWA unless the wastes are subject to a specified method of treatment other than DEACT in 40 <i>CFR</i> 268.40 ( <i>OAC</i> 3745-270-40) or are D003 reactive cyanide.	Disposal of RCRA restricted hazardous wastes that are hazardous only because they exhibit a hazardous characteristic and are not otherwise prohibited under 40 <i>CFR</i> Part 268— <b>applicable</b>	40 <i>CFR</i> 268.1(c)(4)(i) <i>OAC</i> 3745-01(C)(4)
General duty to mitigate for discharge of wastewater from water treatment system	Take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of effluent standards which has a reasonable likelihood of adversely affecting human health or the environment.	Discharge of pollutants to surface waters— <b>applicable</b>	40 <i>CFR</i> 122.41(d) <i>ORC</i> 6111.04(C)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Operation and maintenance of treatment system	Properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) installed or used to achieve compliance with the effluent standards. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures.	Discharge of pollutants to surface waters— <b>applicable</b>	40 <i>CFR</i> 122.41(e) <i>OAC</i> 3745-33-08(A)(8)
Criteria for discharge of wastewater with radionuclides into surface water	Except for tritium and sanitary sewers, apply BAT if at the point of discharge:	Discharge or release of liquids containing radionuclides from DOE activities— <b>TBC</b>	DOE Order 458.1(g)(5)(a)
	<ul style="list-style-type: none"> <li>The annual average concentration of a given radionuclide is greater than the DCS value for water or, for multiple radionuclides, the composite DCS must be the sum of the fractional DCS values derived from DOE-approved DCS values.</li> </ul>		
	<ul style="list-style-type: none"> <li>The discharge contributes greater than 10 mrem (0.1 mSv) annual TED to members of the public or</li> </ul>		DOE Order 458.1(g)(5)(b)
	<ul style="list-style-type: none"> <li>The collective dose from all DOE sources is greater than 100 person-rem (1 person-Sv) and the liquid discharge contributes 50% or more of this collective dose.</li> </ul>		DOE Order 458.1(g)(5)(c)
	Conduct activities to ensure that liquid discharges containing radionuclides from DOE activities do not exceed an average (at the point of discharge) of either of the following:	Release of liquids containing radionuclides from DOE activities— <b>TBC</b>	DOE Order 458.1(g)(4)
	<ul style="list-style-type: none"> <li>5 pCi (0.2 Bq) per gram above background level of settleable solids for alpha-emitting radionuclides or</li> </ul>		
	<ul style="list-style-type: none"> <li>50 pCi (2 Bq) per gram above background level of settleable solids for beta-emitting radionuclides.</li> </ul>		

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Criteria for discharge of wastewater with radionuclides into surface water (continued)	Ensure that liquid releases are managed in a manner that protects ground water resources now and in the future, based on use and value considerations.		DOE Order 458.1(g)(3)
	Ensure that radionuclides contained in liquid effluents do not cause private or public drinking water systems to exceed the drinking water MCLs in 40 <i>CFR</i> 141.		DOE Order 458.1(g)(7)
Technology-based treatment requirements for wastewater discharge	<p>To the extent that EPA promulgated effluent limitations are inapplicable, shall develop on a case-by-case BPJ basis under §402(a)(1)(B) of the CWA, technology based effluent limitations by applying the factors listed in 40 <i>CFR</i> §125.3(d) and shall consider:</p> <ul style="list-style-type: none"> <li>• The appropriate technology for this category or class of point sources, based upon all available information; and</li> <li>• Any unique factors relating to the discharger.</li> </ul>	Discharge of pollutants to surface waters from other than a POTW— <b>applicable</b>	40 <i>CFR</i> 125.3(c)(2) <i>ORC</i> 6111.042
Water quality-based effluent limits for wastewater discharge	<p>Must develop water quality based effluent limits that ensure that:</p> <ul style="list-style-type: none"> <li>• The level of water quality to be achieved by limits on point source(s) established under this paragraph is derived from, and complies with all applicable water quality standards and</li> <li>• Effluent limits developed to protect narrative or numeric water quality criteria are consistent with the assumptions and any available waste load allocation for the discharge prepared by the State and approved by EPA pursuant to 40 <i>CFR</i> §130.7.</li> </ul>	Discharge of pollutants to surface waters that causes, or has reasonable potential to cause, or contributes to an instream excursion above a narrative or numeric criteria within a State water quality standard established under §303 of the CWA— <b>applicable</b>	40 <i>CFR</i> 122.44(d)(1)(vii) <i>OAC</i> 3745-33-05(A)(1)
	Must attain or maintain a specified water quality through water quality related effluent limits established under §302 of the CWA.		40 <i>CFR</i> 122.44(d)(2)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Water quality-based effluent limits for wastewater discharge (continued)	No entity shall cause pollution or place or cause to be placed any sewage, sludge, sludge materials, industrial waste, or other wastes in a location where they cause pollution of any waters of the state.		ORC 6111.04
	No person shall violate or fail to perform any duty imposed by Sections 6111.01 to 6111.08 of the Revised Code or violate any order, rule, or term or condition of a permit issued or adopted by the director of environmental protection pursuant to those sections.		ORC 6111.07
	Stream use designations are given for Little Beaver Creek drainage basin and Scioto River drainage basin and OAC 3745-1-07 is referenced for applicable water quality standards.		OAC 3745-1-09 OAC 3745-1-15
	OAC 3745-1-07 provides allowable instream concentrations of pollutants that may be found in surface waters or discharged into surface waters, depending on use designation, and are applied as “outside mixing zone” or “inside mixing zone maximum” averages.		OAC 3745-1-07
	The general water quality criteria listed in OAC 3745-1-04 (which address suspended solids, floating debris, oil, scum, color, odor, toxic substances, nuisance growth of algae and weeds, and sewage) apply to all surface waters of the state including mixing zones.		OAC 3745-1-04
Monitoring requirements for water treatment system discharges	In addition to 40 <i>CFR</i> §122.48(a) and (b) and to assure compliance with effluent limitations, one must monitor, as provided in subsections (i) thru (iv) of §122.44(i)(1).  <i>NOTE:</i> Monitoring parameters, including frequency of sampling, will be developed as part of the DFF&O process and included in a Remedial Design, RAWP, or other appropriate DFF&O document.	Discharge of pollutants to surface waters— <b>applicable</b>	40 <i>CFR</i> 122.44(i)(1) OAC 3745-33-08(A)(6)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

<b>Media/Location/Action<sup>a</sup></b>	<b>Requirements<sup>b</sup></b>	<b>Prerequisite</b>	<b>Citation</b>
Monitoring requirements for water treatment system discharges (continued)	All effluent limitations, standards and prohibitions shall be established for each outfall or discharge point, except as provided under §122.44(k).		40 <i>CFR</i> 122.45(a) <i>OAC</i> 3745-33-06(A)
	All effluent limitations, standards and prohibitions, including those necessary to achieve water quality standards, shall unless impracticable be stated as maximum daily and average monthly discharge limitations for all discharges.	Continuous discharge of pollutants to surface waters— <b>applicable</b>	40 <i>CFR</i> 122.45(d)(1)
<b>AIR EMISSIONS</b>			
<i>Fugitive air emissions</i>			
Activities causing fugitive dust (particulate) emissions	Shall take reasonable achievable control measures to prevent particulate matter from becoming airborne. Reasonable achievable control measures shall include, but are not limited to, the following:	Fugitive emissions from transportation, land-disturbing, or building alteration activities located in areas identified in Appendix A to <i>OAC</i> 3745-17-08, except as exempted under <i>OAC</i> 3745-17-08(A)(3)— <b>relevant and appropriate</b>	<i>OAC</i> 3745-17-08(B)
	<ul style="list-style-type: none"> <li>Use, where possible, of water or chemicals for control of dust and in demolition of existing buildings or structures, construction operations, grading of roads, or the clearing of land</li> </ul>		<i>OAC</i> 3745-17-08(B)(1)
	<ul style="list-style-type: none"> <li>Periodic application of asphalt, oil (excluding used oil), water, or other suitable chemicals on dirt or gravel roads and parking lots, materials stock piles, and other surfaces which can create airborne dusts, or the use of canvas or other suitable coverings for all materials stockpiles and stockpiling operations except temporary stockpiles</li> </ul>		<i>OAC</i> 3745-17-08(B)(2) and (6)
	<ul style="list-style-type: none"> <li>Install and use hoods, fans, and other equipment to adequately enclose, contain, capture, vent, and control fugitive dust at the point of capture to extent possible with good engineering design. Equipment must meet efficiency requirements of <i>OAC</i> 3745-17-08(B)(3)(a) and (b).</li> </ul>		<i>OAC</i> 3745-17-08(B)(3)



**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

Media/Location/Action <sup>a</sup>	Requirements <sup>b</sup>	Prerequisite	Citation
Activities causing fugitive dust (particulate) emissions (continued)	• Use of adequate containment methods during sandblasting or similar operations		OAC 3745-17-08(B)(5)
	• Cover, at all times, open-bodied vehicles when transporting materials likely to become airborne		OAC 3745-17-08(B)(7)
	• Pave and maintain roadways in a clean condition		OAC 3745-17-08(B)(8)
	• Promptly remove, in such a manner as to minimize or prevent resuspension, earth or other material from paved streets onto which this material has been deposited by trucking or earth moving equipment or erosion by water or other means.		OAC 3745-17-08(B)(9)
<i>Air emissions from a stationary source</i>			
Activities causing release of air pollutants	Shall not cause the emission or escape into the open air from any source or sources whatsoever, of smoke, ashes, dust, dirt, grime, acids, fumes, gases, vapors, odors, or any other substances or combinations of substances, in such manner or in such amounts as to endanger the health, safety, or welfare of the public, or cause unreasonable injury or damage to property.	Activities causing the release of air pollution nuisances as defined in OAC 3745-15-07(A) — <b>applicable</b>	OAC 3745-15-07
Activities causing radionuclide air emissions	Emissions of radionuclides to the ambient air from DOE facilities shall not exceed those amounts that would cause any member of the public to receive an EDE of 10 mrem/year.	Radionuclide air emissions from DOE facilities— <b>applicable</b>	40 CFR 61.92
Air emissions from process vents in treatment of VOC contaminated water	Except as provided in paragraphs (C), (D) and (H) of OAC 3745-15-05 and division (B) of section 3704.011 of the Revised Code, any air contaminant source is exempt from Chapter 3704 of the Revised Code and rules adopted thereunder, unless the potential emissions of any one of the following exceeds 10 lb/day: particulate matter, sulfur dioxide, nitrogen oxides, organic compounds, carbon monoxide, lead or any other air contaminant.	Air emissions from an air contaminant source— <b>applicable</b>	OAC 3745-15-05(B)

**Table A.1. ARARs and TBC Guidance for the Site-wide Waste Disposition Evaluation Project On-Site Disposal Alternative at PORTS, Piketon, Ohio (Continued)**

Media/Location/Action <sup>a</sup>	Requirements <sup>b</sup>	Prerequisite	Citation
ACM = asbestos-containing material	LPP = LATA/Parallax Portsmouth, LLC		
ALARA = as low as reasonably achievable	MCL = maximum contaminant level		
ARAR = applicable or relevant and appropriate requirement	MVAC = motor vehicle air conditioning		
AST = aboveground storage tank	NACE = National Association of Corrosion Engineers		
ASTM = American Society for Testing and Materials	NCP = National Oil and Hazardous Substances Pollution Contingency Plan		
BAT = best available technology	NPDES = National Pollutant Discharge Elimination System		
BPJ = best professional judgment	<i>OAC = Ohio Administrative Code</i>		
CAMU = corrective action management unit	Ohio EPA = Ohio Environmental Protection Agency		
CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act of 1980	<i>ORC = Ohio Revised Code</i>		
<i>CFR = Code of Federal Regulations</i>	PCB = polychlorinated biphenyl		
CMBST = combustion	POLYM = polymerization		
COE = Corps of Engineers	PORTS = Portsmouth Gaseous Diffusion Plant		
CQA = Construction Quality Assurance	POTW = publicly owned treatment works		
CWA = Clean Water Act	QA = quality assurance		
DCS = Derived Concentration Technical Standard	QC = quality control		
DEACT = deactivation	RACM = regulated asbestos-containing material		
DFF&O = <i>The April 13, 2010 Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action, including the July 16, 2012 Modification thereto</i>	RAWP = remedial action work plan		
DOE = U.S. Department of Energy	RCRA = Resource Conservation and Recovery Act of 1976, as amended		
DOI = U.S. Department of Interior	RORGS = recovery of organics		
DOT = U.S. Department of Transportation	TBC = to-be-considered		
EDE = effective dose equivalent	TED = total effective dose		
EPA = U.S. Environmental Protection Agency	TSCA = Toxic Substances Control Act of 1976		
FR = Federal Register	TSD = treatment, storage, and disposal		
HMR = Hazardous Materials Regulations	TU = temporary unit		
HMTA = Hazardous Materials Transportation Act of 1975 (Amendments of 1976)	<i>USC = United States Code</i>		
ID = identification number	UST = underground storage tank		
LDR = land disposal restriction	UTS = universal treatment standard		
LLW = low-level (radioactive) waste	VOC = volatile organic compound		
	WAC = waste acceptance criteria		
	WWTU = wastewater treatment unit		

**APPENDIX B: U.S. DEPARTMENT OF ENERGY'S PROPOSED CORRECTIVE ACTION  
MANAGEMENT UNIT AND AREA OF CONTAMINATION DESIGNATIONS  
FOR THE SELECTED REMEDY**

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## ACRONYMS

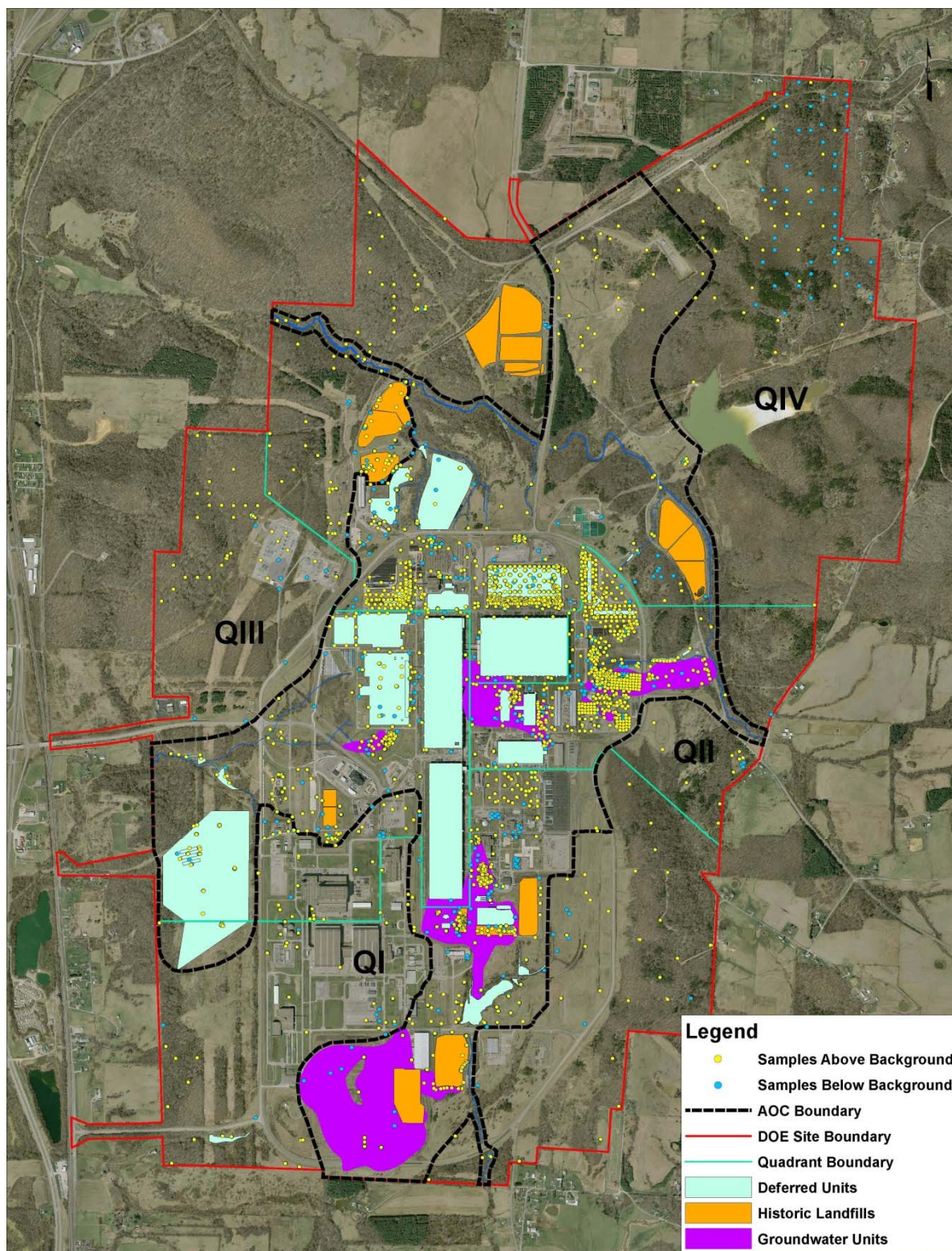
AOC	area of contamination
CAMU	Corrective Action Management Unit
DFF&O	<i>The April 13, 2010 Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action, including the July 16, 2012 Modification thereto</i>
DOE	U.S. Department of Energy
ELCR	excess lifetime cancer risk
IMTA	Impacted Materials Transfer Area
OAC	<i>Ohio Administrative Code</i>
Ohio EPA	Ohio Environmental Protection Agency
OSDC	on-Site disposal cell
PHC	principal hazardous constituent
PORTS	Portsmouth Gaseous Diffusion Plant
RCRA	Resource Conservation and Recovery Act of 1976, as amended
ROD	Record of Decision
TCE	trichloroethene
WAC	waste acceptance criteria

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This appendix summarizes the basis for the Ohio Environmental Protection Agency (Ohio EPA) Director's designation under *Ohio Administrative Code (OAC) 3745-57-72(A)* of the On-Site Disposal Cell (OSDC) as a treatment, storage, and disposal Corrective Action Management Unit (CAMU) in the Site-wide Waste Disposition Evaluation Project Record of Decision (ROD). It also provides the Impacted Materials Transfer Area (IMTA) as a treatment and storage CAMU. CAMU means an area within a facility that is used only for managing CAMU-eligible wastes for implementing corrective action or cleanup at the facility. CAMUs are created under the Resource Conservation and Recovery Act of 1976, as amended (RCRA) to facilitate treatment, storage, and disposal of hazardous wastes managed for implementing cleanup, and to remove the disincentives to cleanup that the application of RCRA to these wastes can sometimes impose. RCRA, also known as the Solid Waste Disposal Act, is a federal law that allows for the regulation and management of hazardous waste.

The designation of the OSDC as a CAMU at the Portsmouth Gaseous Diffusion Plant (PORTS) allows for the excavation, consolidation, and on-Site disposal of cleanup wastes that are contaminated with RCRA-regulated hazardous wastes and hazardous wastes constituents into the OSDC, provided the wastes meet all waste acceptance criteria (WAC) limits, including any waste treatment standards established for disposal in the CAMU. A CAMU is an area located within a facility which manages only "CAMU-eligible" waste. CAMU-eligible waste is generally remediation waste (e.g., contaminated soil). At PORTS, the building demolition wastes are also considered to be CAMU eligible. The CAMUs were developed to promote more aggressive remediation by providing a more flexible approach to the management and disposition of hazardous waste-contaminated cleanup wastes. At PORTS, the OSDC CAMU will serve this purpose by providing the mechanism to potentially remove and consolidate facility-wide contamination from various areas (e.g., closed landfill units within Perimeter Road), into a new state-of-the-art OSDC. These regulations provide that CAMU-eligible wastes are placed in engineered storage or disposal facilities to assure the protection of human health and the environment.

Along with the CAMU designation, concurrence/approval, as applicable, with the ROD also signifies concurrence by the Ohio EPA Director that a portion of PORTS is an area of contamination (AOC) as a tool for the efficient management and consolidation of remediation wastes generated during implementation of the cleanup actions at PORTS. The AOC concept allows the U.S. Department of Energy (DOE) to manage cleanup waste without triggering traditional RCRA requirements as long as the cleanup waste is managed within the AOC. The proposed boundaries of the AOC are presented in Figure B.1. Through extensive sampling, DOE has defined the horizontal boundaries of the AOC at DOE's Portsmouth reservation as depicted in Figure B.1. While the contiguous vertical depth of contamination within this area varies, by using this extensive sampling data, DOE will be able to navigate during the remediation to either ensure remedial activities comport with the AOC policy when working in contaminated media for purposes of RCRA compliance, or use other appropriate remedial regulatory tools, such as storage/treatment CAMUs as discussed in the document, when remedial activities are outside the scope of the AOC policy. Furthermore, while extensive sample data results have not been gathered from underneath buildings within the potential AOC, DOE believes that, at a minimum, these areas under the buildings would be within the general horizontal AOC presented. These buildings, as they exist currently, are encompassed by other areas of generally dispersed contamination and therefore fall within the scope of an AOC. Using this AOC allows for the unencumbered movement of decontamination and decommissioning wastes, waste not within *The April 13, 2010 Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action, including the July 16, 2012 Modification thereto* (DFF&O) (non-DFF&O waste), and other remediation waste within the confines of the AOC without triggering the generation of hazardous waste that would result in the need for additional handling requirements to be implemented.



Note: The AOC also includes the wastewater outfall line to the Scioto River.

**Figure B.1. Area of Contamination Lateral Boundary**



This appendix includes a discussion of the basis for the Director's designation of the OSDC as a CAMU; the process for identifying principal hazardous constituents (PHCs); the basis for the adjusted treatment standard for trichloroethene (TCE), the only PHC currently identified; and the Director's designation of the IMTA as a treatment and storage CAMU. The appendix also describes the process for identifying and designating future temporary treatment and storage CAMUs that may be necessary during the design and implementation of the remediation efforts at PORTS. More detail can be found in the Waste Disposition Remedial Investigation/Feasibility Study Supplement No. 1, titled *Supplement No. 1 to the Remedial Investigation and Feasibility Study Report for the Site-Wide Waste Disposition Evaluation Project Proposed Corrective Action Management Unit and Area of Contamination Designations for Alternative 2 at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (DOE 2014).

In response to DOE's proposal to designate the CAMU, Ohio EPA considered the criteria set forth in OAC 3745-57-72 and determined that the CAMU satisfies all of the following required criteria:

- The CAMU facilitates the implementation of a reliable, effective, protective and cost-effective remedy
- The management of waste at the designated CAMU will not create unacceptable risk to human health or the environment resulting from exposure to hazardous wastes or hazardous waste constituents
- The CAMU includes uncontaminated areas of the Site only to the extent inclusion of such areas is more protective than managing the waste at contaminated areas
- Wastes in the CAMU that remain after closure would be managed and contained to minimize future release, to the extent practicable
- The CAMU expedites the timing of remedial activity implementation
- The CAMU uses, to the extent appropriate, treatment to reduce the toxicity, mobility, or volume of waste remaining after closure of the CAMU
- The CAMU, to the extent practicable, minimizes the land area of the facility upon which wastes will remain in place after closure of the CAMU.

There are four steps that have been used and will be used in the future to identify PHCs, which are recognized in the CAMU regulations as those constituents that may require treatment prior to disposal in a CAMU. First, any contaminant that is a RCRA hazardous waste or hazardous waste constituent defined under OAC 3745-270 is a potential PHC. Second, the maximum contaminant level of the constituent present is compared to a risk-based screening level equating to a  $1 \times 10^{-3}$  excess lifetime cancer risk (ELCR) through ingestion or inhalation (or a hazard quotient of 10 for non-carcinogenic contaminants) for the potential future outdoor industrial worker of PORTS. If that screening level is not exceeded, the contaminant is not a PHC. Third, if the maximum value does exceed the screening level, either a qualitative or quantitative evaluation is done to determine if the contaminant would cause an ELCR of  $1 \times 10^{-3}$  or a hazard quotient of 10 in an area. Finally, any hazardous constituent that poses a threat to groundwater resulting in an elevated risk to human health is also considered as a potential PHC.

Based on the large amount of existing soil data collected since the early 1990s for over 100 potential contaminants at PORTS, only TCE is currently identified as a PHC. It is designated as a PHC because it is considered a listed RCRA hazardous waste at PORTS due to the process by which it was used and

because the known soil concentrations in several investigation areas at PORTS exceed the calculated 282 mg/kg risk-based PHC screening value for TCE. Additionally, there are sufficient samples exceeding the level that are within or located just above the groundwater table, indicating that TCE currently represents an elevated risk to humans from groundwater use. Should future data identify the potential that other contaminants may be PHCs, the same process would be conducted to evaluate these contaminants.

There are two treatment options in the CAMU regulations. Typically for remediation waste, those requirements in *OAC 3745-57-72(E)(4)(d)* are used to identify the treatment standard that must be achieved. The goal of a 90 percent reduction in the starting representative concentration of the exposure unit is the basis for most treatment standards set under this provision. The other provision in *OAC 3745-57-72(E)(4)(e)* provides various options for the Director to adjust the treatment standard, considering other factors such as community input, short-term risks, or cost-effectiveness based on the protectiveness provided by the CAMU. The adjusted standards selected by the Director must be protective of human health and the environment.

DOE requested, and the Director concurred with, the use of the adjusted treatment standard approach identified in *OAC 3745-57-72(E)(4)(e)* to set treatment standards for TCE, which is primarily present in OSDC fill material that may be obtained from PORTS' existing landfills inside Perimeter Road and from contaminated soils removed from the PORTS groundwater contamination plumes. The primary reason for using the (E)(4)(e) provision is the need for any OSDC fill actions to remain cost-effective to maximize the opportunity for consolidating contaminated soil in the OSDC and to direct funds towards improving the cleanup schedule. If additional PHCs are identified, consideration of both rule provisions will be evaluated.

The primary justification used to develop an adjusted standard for TCE under the (E)(4)(e) provision are as follows:

- 1) Dewatering of any soil containing free liquids including pure organic solvents would be the treatment method of choice.
- 2) Dewatering is considered a cost-effective treatment technology because other elements of the WAC prohibit the disposal of waste with free liquids present.
- 3) Residual TCE concentrations in the soil after dewatering are anticipated to be orders of magnitude below any levels required to be protective after disposal because of the robust design of the OSDC and the low permeability of the underlying bedrock. Therefore, use of dewatering would be a cost-effective and protective treatment technology.
- 4) A cost-effective means of handling the contaminated soil prior to use as OSDC fill improves the opportunity to use contaminated soil as OSDC fill, a preference by the local community.
- 5) Finally, considering the need to protect the OSDC lining system, an adjusted treatment standard of 5,000 ppm was selected and is presented as part of the OSDC WAC, to represent the final maximum TCE contamination in the soil after dewatering, if needed.

Treatment and storage CAMU(s) can also be used for storage and/or treatment of wastes which will not remain after closure of the CAMU. As part of this selected remedy, the IMTA has been designated as a storage and treatment CAMU. It is likely that additional treatment or storage CAMU(s) may be established within the AOC during implementation of the selected remedy. The identification of such

CAMUs would be presented in future regulatory documents and the CAMU information would be made available for public comment prior to Ohio EPA concurrence/approval, as applicable.

Consistent with the DFF&O, the Ohio EPA Director has considered all anticipated waste streams to be generated under the DFF&O work activities and the potential waste streams outside the DFF&O in the technical evaluation of the CAMU designations summarized in this ROD. Although all anticipated waste streams have been considered in the technical CAMU evaluations, additional regulatory authorizations/approvals will be necessary to place those waste streams that originate outside of the DFF&O work activities into the CAMU.

If the future authorizations/approvals for the excavation, treatment if necessary, and placement of waste streams that originate outside the DFF&O work activities in the OSDC occur, the identified PHC and adjusted treatment standard summarized in this ROD will serve as overarching WAC limits for TCE in all CAMU-eligible waste streams authorized for disposal in the OSDC, irrespective of their regulatory origin.

Under *OAC 3745-57-72(H)*, the Ohio EPA Director is required to provide public notice and a reasonable opportunity for public comment before designation of the CAMU. DOE used the Waste Disposition Proposed Plan to consider public comments on the proposed CAMU designation. Ohio EPA provided public notice and sought public comments on the proposed CAMU designation through a separate notification. No revisions in this ROD to the designation of the CAMUs were necessary as a result of public comment,

## REFERENCE

DOE 2014, *Supplement No. 1 to the Remedial Investigation and Feasibility Study Report for the Site-wide Waste Disposition Evaluation Project: Proposed Corrective Action Management Unit and Area of Contamination Designations for Alternative 2 at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio*, DOE/PPPO/03-0646&D1, U.S. Department of Energy, Piketon, OH, October.

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